

# **ENVIRONMENTAL ASSESSMENT**

**EA: AK-023-05-005**

## **National Petroleum Reserve-Alaska (NPR-A) Northeast Planning Area Winter Exploration Drilling Program**

**ConocoPhillips Alaska, Inc.**

**December 2004**

**Prepared By:**

**USDOI Bureau of Land Management, Alaska  
Northern Field Office  
Anchorage Field Office**

**Technical Assistance:**

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Anchorage, Alaska 99503**

## ENVIRONMENTAL ASSESSMENT

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**Title:** National Petroleum Reserve-Alaska (NPR-A)  
Northeast Planning Area Winter Exploration Drilling Program

**EA Number:** AK-023-05-005

**Serial Number:** AA-081727, AA-081855, AA-084130, AA-081840, AA-081737, AA-081839, FF-092931

**Applicant:** ConocoPhillips Alaska, Inc.  
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**Date Prepared:** October 2004

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**Lands Involved:** Proposed alternate routes for approximately 26 miles of ice road extension, including various ice road spurs to six new exploration ice drill pads in the ConocoPhillips exploration prospects in the Northeastern NPR-A. Also, proposed amendment to Right of Way (ROW) FF-92931 to previously permitted exploration wells, including access to Trailblazer H-1 for well abandonment. Specific locations are identified in the case files and project plans. Drilling pad locations are:

- T11N, R5W, Sec. 33, Umat Meridian (Kokoda 3)
- T11N, R5W, Sec. 5, Umat Meridian (Kokoda 4)
- T11N, R5W, Sec. 5, Umat Meridian (Kokoda 5)
- T12N, R5W, Sec. 22, Umat Meridian (Noatak 1)
- T11N, R 6W, Sec. 17, Umat Meridian (Bounty 1)
- T12N, R7W, Sec. 15, Umat Meridian (Defiance 1)

This Environmental Assessment (EA) has been prepared to meet the requirements of the National Environmental Policy Act (NEPA), and to support U.S. Department of Interior (USDOl) Bureau of Land Management (BLM) decision-making on permits required to construct and implement the proposed project. The scope of the EA includes analysis of effects of the proposed exploration activity and alternatives, including the no-action alternative. The EA also addresses the impacts of hypothetical oil and gas field development if an economic discovery is made during this activity.

This EA, a standalone document, is the most recent in a series of NEPA assessments prepared by BLM in evaluating potential and proposed oil exploration and development in the Northeast NPR-A Planning Area. Over the past five years, BLM has evaluated construction and drilling at 60 potential exploration drill sites, construction of approximately 400 miles of ice road and 15 ice airstrips, and more than 400 miles of overland trail in the Northeast NPR-A. Impacts of similar activities have also been evaluated in three Environmental Impact Statements (EIS) associated with multiuse management plans in the NPR-A and one for development in the Northeast NPR-A and adjacent Colville River delta.

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## 1 INTRODUCTION

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ConocoPhillips Alaska, Inc. (CPAI) has applied for permits to access and drill on valid oil and gas leases as part of an expanded winter exploration program in the National Petroleum Reserve-Alaska (NPR-A). CPAI, formerly known as Phillips Alaska, Inc. (PAI) and ARCO Alaska Inc. (ARCO), has completed five seasons of similar exploration work in the NPR-A since January 2000.

CPAI submitted permit applications, including the BLM Right-of-Way (ROW) application and Surface Use Program, to federal, state, and local agencies on October 18, 2004. CPAI plans to file applications for Permits to Drill (APDs) in accordance with 43 Code of Federal Regulations (CFR) 3160. CPAI's BLM Nationwide Oil and Gas Bond number is 888912.

This Environmental Assessment (EA) has been prepared to support BLM decision-making, to identify and develop appropriate mitigation measures, and to satisfy requirements of the National Environmental Policy Act (NEPA).

### 1.1 HISTORY OF ACTIVITY IN THE NPR-A

Following creation of the 23-million-acre Naval Petroleum Reserve Number 4 (later renamed the National Petroleum Reserve-Alaska), the federal government drilled at 135 sites and private industry drilled at 1 test site. In 1998, an Integrated Activity Plan (IAP) with associated Environmental Impact Statement (EIS)<sup>1</sup> for the Northeast NPR-A Planning Area was released, followed by a Record of Decision adopting the IAP/EIS<sup>2</sup> and making approximately 4 million acres in the Planning Area available for oil and gas leasing.

Based on the ROD, almost 1.5 million acres have been leased in the Northeast Planning Area. Under those leases, eight winter exploration drilling programs and associated activities have been authorized and completed.

In authorizing those exploration activities, BLM evaluated drilling at 60 potential drill sites, although only 17 wells and one sidetrack have been drilled during five winter seasons of exploration activity. Most exploration programs include contingencies (e.g., multiple drilling site locations and wells) to provide operational flexibility and the ability to adapt to changing conditions. Drilling is limited to only the most promising prospects, and only a portion of the evaluated program is actually completed.

Based on results of previously authorized exploration drilling, CPAI plans to develop two production drill sites in the NPR-A.<sup>3</sup> CPAI believes that significant recoverable oil potential exists within the NPR-A, and is proposing to conduct additional exploratory drilling on its leases. The proposed action, summarized below and detailed in Section 2, supplements previously evaluated and approved exploration activities in the NPR-A.

### 1.2 PROPOSED ACTION

CPAI (i.e., the Applicant) has applied to expand its existing NPR-A exploration program to include six new drilling sites (See Figure 1). To the extent practicable, the Applicant will use existing authorizations to access the project area. The program may span up to five winter drilling seasons, beginning in December 2004, with the drilling schedule contingent upon permitting, weather, ongoing data analysis, and funding.

### 1.3 PURPOSE OF AND NEED FOR THE PROJECT

The purpose of the proposed project is to permit the Applicant to access valid federal leases in the NPR-A, for drilling wells and sidetracks at any of the proposed pad locations, within a flexible timeframe. The project is designed to meet a number of CPAI needs and objectives, including:

- Obtain amended ROW to access drilling sites in a manner that allows for maximum operations during any one winter seasonal in a cost effective manner.

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<sup>1</sup> USDOl. August 1998. Northeast NPR-A Final Integrated Activity Plan/Environmental Impact Statement (IAP/EIS). Vol. I and II.

<sup>2</sup> Secretary of the Interior. October 1998. Northeast NPR-A IAP/EIS Record of Decision (ROD). p. 1.

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<sup>3</sup> USDOl BLM, in cooperation with US Army Corps of Engineers, US Environmental Protection Agency, US Coast Guard, and the State of Alaska. September 2004. Final EIS. Alpine Satellite Development Plan (ASDP).

- Acquire sufficient subsurface information to satisfy the Applicant's economic and exploration performance criteria.
- Comply with all related stipulations of the ROD and associated permits and approvals.

The proposed project is needed to determine if prospects on the Applicant's leases contain economically recoverable oil and gas. A primary need for the project is implicit in the growing demand for oil and gas worldwide, accompanied by growing concern in the U.S. over dependence on foreign oil supplies. The project is also needed to replace diminishing North Slope oil supplies and maintain design efficiency of the Trans Alaska Pipeline System (TAPS). Revenues from production are needed to support local, state, and national economies. The project is also intended to provide operational flexibility, while minimizing environmental impact. Alternatives to the proposed action are evaluated on the basis of their effectiveness in meeting these objectives.

#### **1.4 RELATED STATUTES, REGULATIONS, POLICIES, AND PROGRAMS**

The 1998 IAP/EIS was completed to fulfill BLM's responsibility to manage lands in the planning area under the authority of the Naval Petroleum Reserve Production Act, as amended (NPRPA), Federal Land Policy and Management Act of 1976 (FLPMA), NEPA, Alaska National Interest Land Conservation Act (ANILCA), and the Wild and Scenic Rivers Act. Findings in the IAP/EISs and decisions reflected in the 1998 ROD were based upon an open and collaborative public process. In June 2004, BLM published a Draft Amended IAP/EIS for the Northeast Planning Area,<sup>4</sup> although this EA is based solely on the decisions and environmental protections of the 1998 ROD.

##### **1.4.1 Federal Laws and Regulations**

The proposed action must comply with numerous federal laws that govern activities on public lands. Key federal controls associated with the proposed action have been described in related EISs and EAs incorporated by reference.<sup>5,6,7</sup> These include, but

are not limited to: NPRPA, FLPMA, NEPA, ANILCA, Endangered Species Act (ESA), Marine Mammal Protection Act (MMPA), National Historic Preservation Act (NHPA), Clean Water Act (CWA), Clean Air Act (CAA), Archaeological Resource Protection Act, and Magnuson-Stevens Fishery Conservation and Management Act.

The proposed action is consistent with the Energy Policy and Conservation Act (EPCA) Amendments of 2000, which directed the Secretary of the Interior to conduct an inventory of oil and gas resources beneath federal lands and to identify the extent and nature of any restrictions to the development of those resources. The proposed action is also consistent with the May 2001 National Energy Policy, which called for increased domestic exploration and production, and directed BLM to address issues vital to the current and future status of the nation's energy program. The BLM implementation plan directs the agency to continue ongoing operations associated with existing leases (i.e., APDs, inspection and enforcement, NEPA compliance) within the NPR-A.

##### **1.4.2 Required Permits, Licenses, Authorizations, and Approvals**

A number of federal, state, and local permits and approvals must be obtained before the Applicant can access a drill site and commence drilling. Primary requirements for the proposed action are listed in **Table 1**.

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<sup>4</sup> Draft Amended Northeast NPRPA IAP/EIS. USDO I BLM June 2004.

<sup>5</sup> 2004 Draft Amended IAP/EIS. p. I-11 – I-12.

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<sup>6</sup> ASDP FEIS. Table 1.1.4-1.

<sup>7</sup> EA AK-020-00-011 and EA: AK-023-03-008. Section 1.

**Table 1. Permits and Authorizations**

<b>Federal Authorizations and Approvals</b>	
Bureau of Land Management (BLM)	<ul style="list-style-type: none"> <li>▪ ROW authorization for access</li> <li>▪ Application for Permit to Drill (APD)</li> <li>▪ Sundry for Trailblazer H-1 Plugging &amp; Abandonment</li> </ul>
U.S. Fish and Wildlife Service (USFWS)	<ul style="list-style-type: none"> <li>▪ Letter of Authorization for Incidental Take of Polar Bears; Polar Bear/Personnel Encounter Plan</li> <li>▪ Threatened and Endangered Species Consultation <sup>a</sup></li> </ul>
U.S. Environmental Protection Agency (EPA)	<ul style="list-style-type: none"> <li>▪ Domestic Wastewater Discharge, under National Pollutant Discharge Elimination System (NPDES) General Permit No. AKG-31-0000 (drilling/camp contractors)</li> <li>▪ Spill Prevention, Control, and Countermeasures (SPCC) Plan (drilling/testing contractors)</li> </ul>
National Marine Fisheries Service (NMFS)	<ul style="list-style-type: none"> <li>▪ Essential Fish Habitat Consultation <sup>b</sup></li> </ul>
<b>State Authorizations and Approvals</b>	
Alaska Department of Natural Resources (ADNR)	<ul style="list-style-type: none"> <li>▪ Program General Concurrences (e.g., GCD 34)</li> <li>▪ Land Use Permit for tundra travel and ice road construction on state lands</li> <li>▪ Temporary Water Use Permit</li> <li>▪ Cultural Resources Consultation with SHPO</li> <li>▪ Fish Habitat Permit (Office of Habitat Management and Permitting)</li> </ul> <p>Note: The project does not require an ACMP Consistency Determination <sup>c</sup></p>
Alaska Department of Environmental Conservation (ADEC)	<ul style="list-style-type: none"> <li>▪ Temporary Storage of Drilling Wastes</li> <li>▪ Air Quality Permit by Rule (Drilling rig and storage tanks, if necessary)</li> <li>▪ Oil Discharge Prevention and Contingency Plan (ODPCP)</li> <li>▪ Certificate of Financial Responsibility</li> <li>▪ Wastewater and Water Treatment System Approval (drilling/camp contractors)</li> </ul>
Alaska Oil and Gas Conservation Commission (AOGCC)	<ul style="list-style-type: none"> <li>▪ Permit to Drill</li> <li>▪ Approval for annular disposal of drilling wastes (optional)</li> <li>▪ Sundry for Trailblazer H-1 Plugging &amp; Abandonment</li> </ul>
<b>Local Authorizations and Approvals</b>	
North Slope Borough (NSB)	<ul style="list-style-type: none"> <li>▪ Development Permit (for related project elements)</li> <li>▪ Administrative Approval for Trailblazer H-1 Plugging &amp; Abandonment</li> </ul>

<sup>a</sup> No-Effect Determination was made by BLM on November 24, 2004 for Steller's and spectacled eiders, USFWS concurred on 11/29/2004.

<sup>b</sup> Essential Fish Habitat evaluation by BLM determined that no consultation with NMFS is required.

<sup>c</sup> On September 27, 2004, the ADNR Office of Project Management and Permitting determined that the proposed action is not subject to the Alaska Coastal Management Program, because it is outside of the coastal zone.

### 1.4.3 Related Environmental Analyses

The environmental analyses most closely related to the proposed action are listed in **Table 2**.

All exploration EAs and associated FONSIIs listed in Table 2 documented findings that the proposed project was in compliance with provisions for protecting subsistence use and access, as required by ANILCA Title VIII; the project was not likely to adversely affect Essential Fish Habitat (EFH), and the project was not likely to adversely impact listed Threatened and Endangered Species. As noted previously, BLM completed land-use planning and an EIS of future management of the Northeast NPR-A in 1998, and is currently amending that effort, to account for information and experience gained in the interim. BLM also recently completed land-use planning and impact assessment of future management of the Northwest NPR-A. That IAP/EIS was final in November 2003, and the ROD was issued in January 2004, making an additional 8.8 million acres of Reserve lands available for leasing. These three EISs and related environmental analyses to which this EA is tiered and which are incorporated by reference.<sup>8</sup>

For the 2001 Foothills lease sale, the ADNR also concluded that exploration drilling did not result in significant long-term direct, indirect, or cumulative impacts.<sup>9</sup> Approximately one half of the Foothills lease sale area lies adjacent to the NPR-A, southeast of the Colville River.

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<sup>8</sup> 1998 NE NPR-A IAP/EIS, 2004 Draft Amended IAP/EIS, and 2003 Northwest NPR-A IAP/EIS.

<sup>9</sup> Final Findings of the Director, Oil and Gas Lease Sale. North Slope Foothills Areawide 2001. AK Department of Natural Resources Division of Oil & Gas, Anchorage, Alaska. February 7, 2001.



**Table 2. Related Environmental Analyses**

<b>Environmental Analysis <sup>a</sup></b>	<b>Decision Document</b>	<b>Related Activity <sup>b</sup></b> (proposed exploration sites, unless otherwise noted)
Northeast National Petroleum Reserve-Alaska Integrated Activity Plan/Environmental Impact Statement. USDOI BLM. August 1998. <sup>c</sup>	Record of Decision, Northeast National Petroleum Reserve-Alaska Integrated Activity Plan/Environmental Impact Statement. Prepared by BLM, October 1998.	Multiuse management of the Northeast NPR-A, including oil and gas leasing, exploration and development
EA: AK-020-00-011. Environmental Assessment, 1999-2000 Winter Exploration Drilling Program in the National Petroleum Reserve-Alaska (NPR-A). USDOI BLM, Alaska, Northern Field Office and Anchorage Field Office. January 2000. [ARCO]	Finding of No Significant Impact and Decision Record AA-081794. Application for Permit to Drill and Right-of-Way. BLM. January 2000.	Spark 1, Lookout A, Clover A, Clover B, Moose's Tooth A, Moose's Tooth C, Rendezvous A, and Rendezvous B
EA: AK-023-01-001. Environmental Assessment, Trailblazer Exploration Drilling Program, 2000-2005, National Petroleum Reserve-Alaska (NPR-A). USDOI BLM, Alaska, Northern Field Office and Anchorage Field Office. November 2000 (minor revision January 2001). [BPX]	Finding of No Significant Impact and Decision Record AA-081752. Application for Permit to Drill and Right-of-Way. BLM. January 2001]	Trailblazer A, Trailblazer B, Trailblazer C, Trailblazer D, Trailblazer E, Trailblazer F, Trailblazer G, and Trailblazer H
EA: AK 023-01-003. Environmental Assessment, National Petroleum Reserve-Alaska (NPR-A) Exploration Program, Winter Drilling 2000-2006. USDOI BLM, Alaska, Northern Field Office and Anchorage Field Office. December 2000 (minor revision March 2001). [Phillips]	Finding of No Significant Impact and Decision Record AA-081780. Application for Permit to Drill and Right-of-Way. BLM. March 2001	Spark 2, Spark 3, Spark 4, Spark 5, Rendezvous 1, Rendezvous 2, Outlook 1, Oxbow 1, Hunter 1, and Sunrise 2
EA: AK-023-02-004. Environmental Assessment, National Petroleum Reserve-Alaska (NPR-A) Altamura Prospect Exploration Program. December 2001 (Minor revision January 2002). [Anadarko]	Finding of No Significant Impact and Decision Record AA-081736 [Anadarko]	Altamura 1 and Altamura 2
EA: AK-023-02-005. Environmental Assessment, National Petroleum Reserve-Alaska (NPR-A) 2001-2006 Exploration Drilling Program. USDOI BLM, Alaska, Northern Field Office and Anchorage Field Office. December 2001 (Minor revision January 2002). [Phillips]	Finding of No Significant Impact and Decision Record AA-081780. Application for Permit to Drill and Right-of-Way. BLM. January 2002.	Spark 6, Spark 7, Spark 8, Hunter A, Hunter 2, Lookout 2, Mitre 1, Rendezvous 3, Nova 1, Nova 2, Pioneer 1, Grandview 1, Tuvaq 1, Tuvaq 2, and Tuvaq 3
EA: AK-023-02-033. Environmental Assessment, Puviaq Storage Site Project, National Petroleum Reserve-Alaska. USDOI BLM, Northern Field Office, Arctic Management Team. March 2002. [CPAI]	Finding of No Significant Impact and Decision Record FF-093572. BLM NPR-A Permit 298401. March 28, 2002.	Access to and rig storage near Puviaq
EA: AK-023-03-008. Environmental Assessment. National Petroleum Reserve-Alaska (NPR-A) Exploration Drilling Program, Puviaq #1 and #2 Exploration Wells. USDOI BLM, Alaska, Northern Field Office and Anchorage Field Office. December 2002. [CPAI]	Finding of No Significant Impact and Decision Record AA-081854. Application for Permit to Drill and Right-of-Way. BLM. January 2003.	Puviaq 1 and Puviaq 2
EA: AK-023-03-027. Environmental Assessment, Storage Ice Pads, USDOI BLM, Northern Field Office, Arctic Management Team. February 2003. [CPAI]	Finding of No Significant Impact and Decision Record FF-093905. Permit 298401. February 2003.	Access to and rig store near Kokoda/Carbon

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<b>Environmental Analysis <sup>a</sup></b>	<b>Decision Document</b>	<b>Related Activity <sup>b</sup></b> (proposed exploration sites, unless otherwise noted)
EA: AK-023-03-032. Environmental Assessment, Access To and Drill Stacking at Inigok. USDOI BLM, Northern Field Office, Arctic Management Team. February 2003. [TOTAL E&P USA, Inc.]	Finding of No Significant Impact and Decision Record FF-093906. BLM NPR-A Permit 281001. February 2003.	Access to and rig store at Inigok
CX: AK-023-03-055. Categorical Exclusion, Access Trail to Inigok. April 2003. [CPAI]		Alternate trail access from Puviaq to Inigok for rig store.
EA: AK-023-03-005. Environmental Assessment, National Petroleum Reserve-Alaska (NPR-A) 2003-2008 Exploration Drilling USDOI BLM, Northern Field Office, Arctic Management Team. December 2003. [TOTAL E&P USA]	Finding of No Significant Impact and Decision Record AA-084161. Application for Permit to Drill and Right-of-Way. BLM. December 2003.	Caribou 07-16, Caribou 09-11, Caribou 14-12, Caribou 18-08, Caribou 23-14, Caribou 26-11, Caribou 35-05, and Caribou 35-14
EA: AK-023-04-004. Environmental Assessment National Petroleum Reserve-Alaska (NPR-A) 2003-2008 Exploration Drilling Program, Exploration Wells. USDOI BLM, Alaska, Northern Field Office and Anchorage Field Office. November 2003 (Minor revision December 2003). [CPAI]	Finding of No Significant Impact and Decision Record AA-084129. Application for Permit to Drill and Right-of-Way. BLM. December 2003.	Kokoda 1, Kokoda 2, Powerline 1, Grandview 2, Carbon 1, Summit 2, and Scout 1
Final Environmental Impact Statement. Alpine Satellite Development Plan. USDOI BLM, Alaska State Office, in cooperation with US Army Corps of Engineers, US Environmental Protection Agency, US Coast Guard, and the State of Alaska Anchorage, Alaska. September 2004. <sup>c</sup>	Record of Decision, Final Environmental Impact Statement, Alpine Satellite Development Plan. Prepared by BLM, October 2004.	Production Development
Northwest National Petroleum Reserve-Alaska Integrated Activity Plan/Environmental Impact Statement. USDOI BLM. November 2003.	Record of Decision, Northwest National Petroleum Reserve-Alaska Integrated Activity Plan/ Environmental Impact. Prepared by BLM, January 2004.	Multiuse management of the Northwest NPR-A, including oil and gas leasing, exploration and development
Draft Amended Northeast National Petroleum Reserve-Alaska Integrated Activity Plan/Environmental Impact Statement. USDOI BLM. June 2004	Pending finalization of the IAP/EIA.	Multiuse management of the Northeast NPR-A, including oil and gas leasing, exploration and development

<sup>a</sup> Documents are available for review at the Northern Field Office, BLM, 1150 University Avenue, Fairbanks, Alaska 99709. The most recent EAs may also be accessed at <http://aurora.ak.blm.gov/npra/final/rodtitle.html/>.

<sup>b</sup> See Table 7 for a summary of work completed under these authorizations.

#### 1.4.4 Land Status

All six drill sites described in the proposed action are located on NPR-A lease tracts held by CPAI and Anadarko Petroleum Corporation, under jurisdiction of the BLM. Primary access to the project area from the NPR-A federal land boundary will be via a ROW previously authorized by the BLM, and several new local access routes within the NPR-A. The Trailblazer H drill site lies on a lease (AA-081758) acquired by CPAI in February 2003. The proposed action lies wholly within the NSB. Traditional Land Use Sites (TLUS, as defined in Stipulation 64) will be avoided; Native Allotments will not be crossed unless authorized by the allotment owner and the Bureau of Indian Affairs (BIA).

#### 1.5 PUBLIC INVOLVEMENT

Development of the 1998 Northeast NPR-A IAP/EIS, the 2003 Northwest NPR-A IAP/EIS, the Draft Amended Northeast NPR-A IAP/EIS, and the 2004 Alpine Satellite Development Plan FEIS all involved extensive input from other federal agencies, the State, the NSB, thousands of individuals, and many institutions.<sup>10</sup> Since the 1999 lease sale, a number of meetings and consultations have been held with residents of Nuiqsut, Barrow, Anaktuvuk Pass, Atkasuk, and Wainwright to discuss NPR-A exploration plans, as summarized in Section 5 (Table 9). There was also extensive public involvement associated with proposed development at two drill sites in the NPR-A and three drill sites in the adjacent Colville delta.<sup>11</sup>

Development of the proposed project reflects input gained from meetings with local communities, the NSB, the NPR-A Subsistence Advisory Panel (SAP), and other agencies and entities. CPAI also has an active program that provides additional opportunities for public involvement (e.g., newsletters, local meetings, web site) and often includes local government and community members in the review of proposed well sites, access routes, and stream crossings to obtain

traditional knowledge of subsistence resources and to identify site-specific environmental concerns.

All of the recent NPR-A exploration drilling programs have been public-noticed by BLM. Public and agency comments were considered, and all required federal, state, and local permits were issued -- some with stipulations to mitigate specific issues of concern.

#### 1.6 BLM DECISION PROCESS

BLM's decision on the proposed action will be based on statutory and regulatory authority. The 1998 IAP/EIS served as required NEPA documentation for the first lease sales. The EAs listed in Table 2 have served as additional NEPA analyses for site-specific lease activities. These EAs have been incorporated in their entirety by reference per CEQ Regulation 40 CFR 1502.21.

Prior to authorizing the proposed action, however, BLM must conduct a site-specific NEPA analysis and determine whether the proposed project should be approved, rejected, or modified, and if additional stipulations are needed. This evaluation will be based on governing stipulations as well as actual experience with exploration activity in the NPR-A.

The eight winter exploration programs completed in the NPR-A over the past five years have been based on similar plans and methods of operations. Effects of associated activities (i.e., overland transport, water use, ice road/pad construction, drilling, other operations and maintenance, and abandonment and restoration) are known. Several minor problems have occurred, but these have been successfully corrected or mitigated.

There have been no significant direct, indirect, or cumulative adverse impacts associated with any of the eight authorized winter exploration programs. Neither the recently completed ASDP FEIS nor the 2003 Northwest NPRA IAP/EIS identified new environmental protection measures that reasonably apply to the proposed project area. As a result, the current analysis will focus only on differences in proposed activities and locations that might result in impacts different from those evaluated in

<sup>10</sup> 1998 NE IAP/EIS ROD and 2003 Northwest NPR-A IAP/EIS ROD, Summary. 2004 Draft Amended IAP/EIS, Section 5.

<sup>11</sup> ASDP FEIS. Section 5.

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previous NEPA analyses, including cumulative impacts.

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**Figure 1      Project Vicinity Map**

## 2 PROPOSED ACTION AND ALTERNATIVES

The proposed action includes drilling at up to six locations during a multiple year winter exploration program in the NPR-A. Notices of Staking (NOS) have been filed, with field inspections performed as required for BLM approval of the CPAI surface use plan (documented below in **Table 3**).

**Table 3. Staking and Field Inspection**

Drill Site	Notice of Staking date	Field Inspection date
Bounty 1	7/9/04	8/17/04
Defiance 1	7/9/04	8/17/04
Kokoda 3	7/11/04	8/17/04
Kokoda 4	7/9/04	8/17/04
Kokoda 5	9/21/04	9/15/04
Noatak 1	7/9/04	8/17/04

New access routes and stream crossings have also been field examined. Approval to drill at any proposed or previously approved sites has been requested to accommodate changes in exploration strategy and funding priorities as new data become available.

### 2.1 THE PROPOSED ACTION

The proposed action is similar to those completed in the NPR-A during the five past winter seasons (1999-2004). The project description is therefore, tiered to the Northeast IAP/EIS, with the 2000-2004 Exploration EAs incorporated by reference for main project elements.<sup>12</sup> Details are provided in the Applicant's Plan of Operations and Surface Use Program, which are also incorporated herein by reference.<sup>13</sup>

The proposed action is described below. Main project components are summarized in **Table 4** and location of the drill sites and access routes are depicted on **Figure 2**.

#### 2.1.1 Access and Construction

All six drill sites are in the same general vicinity as previously evaluated and completed exploration programs in the NPR-A. The most closely related programs were described and evaluated in 2003.<sup>14</sup> The Trailblazer site was evaluated in 2000.<sup>15</sup>

Drill site locations are listed in **Table 5**. Drill pads will be approximately 500 by 500 feet in area and 6 inches thick, with additional ice thickness under the drill rig and cuttings storage areas.

Initial access will be by packed snow trail and/or ice road via existing, authorized ROW. From this ROW, access to the drill site locations will follow new alignments. CPAI proposes several minor amendments to the existing ROW and the addition of an 8-mile trail to the Trailblazer H-1 exploration well for plugging and abandonment (P&A).

Rolligons and other ATVs may be used to mobilize a small camp, equipment, and personnel to begin construction of ice roads and pads. To expedite operations, Rolligons may transport the drill rig and may be used to prepack or water the ice road to accelerate frost penetration. The Applicant has requested to enter the NPR-A for this purpose as soon as conditions permit.

Construction of ice roads in up to 26 miles of new ROW will be typically 35 feet wide and 6 inches thick, with ice pullouts or widened areas to facilitate rig transport uphill and for staging equipment. Rig mats or other devices used to support ice construction will be removed prior to the end of the annual operating season. The ice road route includes up to six new fish stream crossings.

An ice staging pad (about 8.3 ac) may be constructed at the Rolligon trailhead (outside the NPR-A). Smaller ice storage pads (about 2.1 ac each) will be located at any of four temporary construction camps along the ice road to support construction in the NPR-A. Temporary ice airstrips may be constructed on grounded lake ice near Kododa 5 (lake M0410), Spark 4 (lake R0076), and Scout 1 (lake M0305).

<sup>12</sup> 1998 IAP/EIS, Section IV.A.1.b and Section 2 of the EAs cited in Table 2.

<sup>13</sup> On file with the BLM, Northern Field Office, the North Slope Borough Planning Department, and accessible at <http://www.conocophillipsalaska.com/permits/>.

<sup>14</sup> EA: AK-023-04-004 and EA: AK-023-04-005, Section 2.

<sup>15</sup> EA: AK-023-01-001.

**Table 4. Summary of Proposed NPR-A Project**

Project Component	Program Total
No. of wells	Up to 12 wells/sidetracks
Well cellar area <sup>a</sup>	Up to 0.28 acres
Ice Drill Pads	Up to 6 pads; 34.2 acres
Ice Staging and Storage Pads	Up to 10 pads (2 per year for 5 years); 36.3 acres
Ice road extension	26 miles new ROW; 110 acres
Ice Airstrip	Up to 10 airstrips (up to 2 per year for 5 years) – reinforced lake ice
Ice Pads (Remote Camp)	Up to four remote camp ice pads along the ice road to facilitate construction of ice roads
Packed Trail	8 miles new ROW; 31 ac (2 trails; one each way)
Water usage	80 MG

Mileage/acreage is approximate; estimated for environmental assessment purposes only.

<sup>a</sup> Installed through the ice drill pad; one for each surface hole @ = .0023 acres.

**Table 5. Ice Drill Pad Locations (All Federal Land)**

Name	BLM Lease No.	New ice road ROW	Section Location (Umat Meridian)	
Bounty 1	AA-081727	9 miles	S 17, T11N-R6W	794 FNL & 4918 FEL
Defiance 1	AA-081855	5 miles	S 15, T12N-R7W	768 FNL & 2884 FEL
Noatak 1	AA-081839	4 miles	S 22, T12N-R5W	2506 FNL & 3347 FEL
Kokoda 3	AA-084130	5 miles	S 33, T11N-R5W	2671 FNL & 2949 FEL
Kokoda 4	AA-081840	0.5 miles	S 5, T11N-R5W	124 FNL & 901 FEL
Kokoda 5	AA-081737	2 miles	S 5, T11N-R5W	3125 FNL & 1709 FEL

Coordinates are NAD 83.

**Table 6. New Water Sources**

Lake (number) <sup>a</sup>	Lake ≥7 feet deep	Fish <sup>b</sup> Present	15% of winter volume deeper than 7 feet <sup>c</sup>	30% of winter volume deeper than 5 feet <sup>c</sup>	Maximum withdrawal requested <sup>c</sup>
M0302, M0328, M0404, M0410 <sup>e</sup> , M0411, M0417A <sup>d</sup> , M0417B <sup>d</sup> , B84057, B84058 <sup>d</sup> , B84059A <sup>d</sup> , B84059B <sup>d</sup> , B84059C <sup>d</sup>	Yes	Yes-S	✓		
M0301, M0303, M0305 <sup>c,e</sup> , M0307, M0310, M0311, M0313, M0315, M0316A, M0316B, M0317, M0318 <sup>d</sup> , M0319 <sup>d</sup> , M0320 <sup>d</sup> , M0321 <sup>d</sup> , M0322 <sup>d</sup> , M0323 <sup>d</sup> , M0324 <sup>d</sup> , M0325 <sup>d</sup> , M0326 <sup>d</sup> , M0327 <sup>d</sup> , M0401A, M0401B, M0409	Yes	Yes-R		✓	
M0403	No	Yes-R		✓	
M0304A, M0304B, M0306A, M0306B, M0308, M0309A, M0309B, M0314, M0402, M0406A-B, M0407D, M0408, M0412, M0413,	Yes	No			✓
M0312, M0405, M0407A, M0407B, M0407C, M0414A, M0414B <sup>f</sup>	No	No			✓

<sup>a</sup> Source: Moulton, 2003 and 2004 fieldwork. Lake location maps on file at DNR and BLM.

<sup>b</sup> No = No fish caught; Yes = fish present; S = Sensitive fish species; R = Resistant fish species (i.e., ninespine stickleback, Alaska blackfish).

<sup>c</sup> Applicant requested withdrawal based on 15% winter volume deeper than 7 feet when sensitive species are present, 30% of winter volume deeper than 5 feet when only resistant fish are present; and unlimited volume when no fish are present.

<sup>d</sup> Meets criteria for Deep Water Lakes Fish Habitat LUEA.

<sup>e</sup> Lakes M0410, R0076 (previously authorized water source) and M0305, all fish lakes, are also proposed as ice airstrip locations.

<sup>f</sup> Ice aggregate only.

Up to 80 million gallons of freshwater have been requested for ice road/pad construction, maintenance, drilling operations, and camp use. Fifty-eight proposed new water source lakes are listed in **Table 6**. Of the 58 lakes, 36 were found to have fish present; no fish were found in the other 22 lakes. Of the 36 fish lakes, 35 were at least seven feet deep. Twenty-one lakes meet the criteria for Deep Water Lakes Fish Habitat LUEA. All lake water intake structures will comply with OHMP requirements for fish protection, with screen integrity monitored.

CPAI requested an exception to Stipulation #20 of the October 1998 ROD, NE NPR-A IAP/EIS. The exception would be to allow for water withdrawal of 28.88 MG (the estimated 30 percent of the winter water volume deeper than five feet) from Lake M0305 where only resistant fish (i.e., ninespine stickleback) were present. For lake L9817, which is a research lake, CPAI has requested an exception to withdraw up 15.3 MG, which would leave the minimum of two feet of free water.

### 2.1.2 Drilling Operations and Support

Drilling and testing operations are similar to those previously evaluated and incorporated by reference.<sup>16</sup> Wells drilled will be temporarily suspended or plugged and abandoned prior to spring breakup. When operations are completed, the drill rig will be transported out of the project area. Vibroseis trucks may collect data for vertical seismic profiles. For drilling multiple years, the rig may be stored over-summer on the gravel road system, on an existing gravel pad in the NPR-A (e.g., Inigok), or on an insulated ice pad.<sup>17</sup>

Ancillary facilities include camps to support drilling and ice construction. Communication towers guyed by concrete blocks (deadmen) may be erected at any pad or on a separate pad. Other facilities include pump houses on water sources (lakes), light plants near pump houses and along ice roads, and a warm-up shelter near the airstrip, if needed.

Up to 75,000 gallons of diesel fuel and 317,000 gallons of crude oil (for wells that are tested) will

be held in lined, bermed storage areas on the drill pad. Up to 35,000 gallons of diesel fuel<sup>18</sup> will be stored in tanks in secondary containment on remote camp pads, and up to 10,000 gallons of fuel may be stored at an airstrip location, but not on lake ice.<sup>19</sup> Refueling on frozen lakes will follow CPAI's approved procedures for fuel transfer.

### 2.1.3 Waste Management

Procedures described in CPAI's NPR-A waste management plan will conform to local, state, and federal requirements. Wastes will be stored temporarily on-site and hauled back to existing North Slope facilities for proper treatment and disposal, as previously evaluated.<sup>20</sup> Rig camp or ice road camp facilities may incinerate burnable wastes.

Domestic wastewater will either be processed and discharged under NPDES Permit or hauled to an approved disposal facility. Drilling muds and cuttings will be temporarily stored on site, pending final disposal by annular injection or at an approved disposal facility. Crude oil from production testing will be held in contained tanks and then injected or hauled out of the NPR-A for processing at an approved facility.

### 2.1.4 Air Emissions

CPAI will operate under the ADEC Air Permit by Rule (now revised to be a minor general permit program), implementing a public access control plan, with entry by unauthorized personnel restricted, if required during the five year project period. CPAI committed to using low sulfur diesel this season, so no exclusion zone is necessary. CPAI evaluated the potential for hydrogen sulfide (H<sub>2</sub>S) release and determined it is not expected at any proposed location. Measures and precautions associated with H<sub>2</sub>S are addressed in the APD filed with BLM. Produced gas will be flared in accordance with ADEC air permit requirements.

<sup>16</sup> EA: AK-020-00-011. Sections II.A.3 and II.A.4.

<sup>17</sup> EA: AK-023-03-027.

<sup>18</sup> Personal Communication S. Rockwell 12/6/2004.

<sup>19</sup> Personal Communication S. Rockwell 12/8/2004.

<sup>20</sup> EA: AK-023-01-003. Section II.A.5.



### 2.1.5 Contingency Plans

Applicant contingency plans are described below.

#### Oil Discharge Prevention and Contingency Plan (ODPCP or C-Plan)

For this activity CPAI must have a site-specific ODPCP approved by ADEC, which is considered sufficient to meet BLM requirements. Additionally, BLM inspects the wells and pads during construction and drilling. No drilling will begin until the well pad is accessible by ice road; the period of active drilling is subject to seasonal restrictions set in the ODPCP.

The Applicant's approved ODPCP, along with approved spill control equipment and supplies, will be kept on site at all times.<sup>21</sup> A CPAI representative and a spill technician from Alaska Clean Seas (ACS) will be on site at each drilling location. Phone service will be available 24-hours a day at the drilling camp. When needed, CPAI will call on resources of other North Slope operators through ACS, Mutual Aid, spill response cooperatives, and contractors, as well as local Village Response Teams, as available.

#### Spill Prevention Control and Countermeasures (SPCC) Plans

An SPCC Plan provides guidelines for pollution prevention and addresses secondary containment when total fuel storage at a site is greater than 1,320 gallons.<sup>22</sup> The drilling contractor will have an SPCC Plan for fuel storage facilities, and the well testing contractor will have an SPCC Plan for its testing tanks.

#### Wildlife Protection and Encounter Plans

CPAI has a Polar Bear/Personnel Encounter Plan approved by the USFWS. This plan and CPAI's Wildlife Avoidance and Interaction Plan provide appropriate wildlife protection measures. Project personnel are instructed not to feed wildlife or attempt to attract, harass or hunt them at drill sites or along transportation routes.

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<sup>21</sup> CPAI Exploration ODPCP (Plan No. 024-CP-5096) is available at ADEC.

<sup>22</sup> 40 CFR 112. New regulations are being phased in (by August 2006) that will affect future requirements.

#### Other Plans

CPAI has an established Incident Management Team (IMT) on call 24-hours a day. CPAI also has Emergency Response Plans available at the various North Slope facilities and an Environmental Health and Safety Policies and Procedures Manual available via CPAI intranet.

### 2.1.6 Operations and Maintenance

The proposed schedule calls for mobilization and ice construction to begin as soon as required authorizations and weather conditions allow, with drilling from ice pads beginning as early as January 2005. Operations and maintenance plans are similar to those previously evaluated and incorporated by reference.<sup>23</sup>

CPAI will implement a health, safety and environmental program. All CPAI employees and contractors on the North Slope are required to complete an 8-hour training program. CPAI also has an approved orientation program, required for all personnel working in the NPR-A, to increase awareness of related environmental, social, and cultural concerns.

### 2.1.7 Abandonment and Restoration

Upon completion of drilling operations, all equipment and supplies will be removed and ice surfaces cleaned. Road and pad sites will be inspected to ensure proper cleanup. Procedures will be similar to those previously evaluated and incorporated by reference, including plugging and abandonment of the Trailblazer H-1 well.<sup>24</sup>

### 2.1.8 Community Relations

CPAI has an established program to address issues with the local communities, regulatory agencies, and special interest groups. BLM and CPAI have conducted a series of community meetings and consultations with residents of Nuiqsut, Barrow, Anaktuvuk Pass, Wainwright, and Atkasuk (See Section 5.1). CPAI issues newsletters to keep the public informed, routinely invites residents to

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<sup>23</sup> EA: AK-020-00-011. Section II.A.9.

<sup>24</sup> EA: AK-023-01-001. Section II.A.9.

participate in site inspections, and posts permitting information on the Internet.<sup>25</sup>

### **Cultural Resources**

New road and pad locations avoid known archaeological and cultural resources, TLUS, and Native Allotments. An archaeological/cultural resources/TLUS clearance survey was conducted for pad locations and along an approximately 1-mile-wide corridor represented by the new access routes shown in Figure 2. The routing shown is approximate, and may be altered in the field due to terrain, stream crossing conditions, or wildlife.

### **Subsistence**

The project area is recognized as a subsistence use area for Nuiqsut and Barrow, and many of the public meetings and consultations have included discussions on subsistence. The Applicant plans to continue consultation with subsistence users and implement mitigation measures of Stipulations 59 and 61. The Applicant has been accompanied during various field inspections by representatives from NSB, NPR-A SAP, and/or other community organizations and government agencies to identify and mitigate subsistence concerns.

### **Economic Opportunity**

The CPAI employment process places a priority on local hire, and will ensure that NSB residents are provided with job opportunities.

## **2.2 POSSIBLE FUTURE ACTION**

Exploration drilling is the only reliable method of verifying the presence of oil, but drilling may or may not result in discovery of potentially producible resources. If a discovery is made, it typically takes an additional 4 to 10 years for further study, design, and installation of facilities to begin production. Each phase of decision-making requires additional environmental review and potential requirements for mitigation and additional environmental protection measures.

BLM regulations provide the option of deferring plans for proposed facilities. Based on the uncertainties associated with wells to be drilled in

the proposed program, CPAI has elected to defer planning for future facilities. Potential field development in and around the NPR-A has, however, been discussed in previous evaluations incorporated by reference.<sup>26, 27, 28</sup> The area likely would be developed and operated in a manner similar to that recently approved for the Alpine Satellite Development Project, incorporating relevant design and environmental protection measures required by the IAP/EIS and ROD.

## **2.3 ALTERNATIVES**

The 1998 IAP/EIS evaluated a fairly defined exploration model, and developed extensive, site-specific protective measures for that concept. As a result, the ROD and existing CPAI leases include 79 stipulations that substantially limit the range of alternatives. The draft 2004 IAP/EIS also includes numerous stipulations and required operating procedures to provide comparable environmental protection in the Northeast NPR-A. The proposed action itself (i.e., drilling a specified number of exploration wells on specific oil and gas leases in the NPR-A) significantly limits alternatives for the location and timing of exploration. Therefore, only a few alternatives for exploration are possible.

This EA is tiered to the broader alternatives analyzed in the 1998 IAP/EIS and to the more specific alternatives subsequently evaluated in exploration EAs, which have been incorporated by reference.<sup>29, 30</sup> Alternatives considered in this EA are described below.

<sup>25</sup> <http://www.conocophillipsalaska.com/permits/>.

<sup>26</sup> 1998 IAP/EIS. Section IV.A.

<sup>27</sup> EA: AK-020-00-011. Section II.B.

<sup>28</sup> ASDP FEIS. Sections 2.2.2 and 2.2.3 and 4G.

<sup>29</sup> 1998 IAP/EIS. Section II.C.1-6.

<sup>30</sup> EA's cited in Table 2, Section II/2, Alternatives.

### 2.3.1 Alternatives Considered but Eliminated from Detailed Analysis

Some alternatives considered but eliminated from detailed analysis have been described in previous evaluations incorporated by reference.<sup>31</sup> Two additional alternatives were initially considered in this EA. One involves drilling to different target locations from a single ice pad (i.e., directional drilling). This alternative might be feasible for drilling Kokoda 4 and Kokoda 5 wells from one pad. For most drill sites however, the distance separating targets exceeds the reach of available, reliable technology. Limitations of this alternative have been previously addressed.<sup>32</sup>

The second alternative considered involves primary access by sea ice road via Harrison Bay, with either overland or ice road access to the drill sites. This was eliminated from further evaluation because it offers no distinct environmental advantage over the proposed action. Several options previously evaluated (i.e. constructed water sources and elimination of ice road offsets) are still under consideration, but have not yet been accepted by BLM. The main access ice road/trail to Kokoda 1 and associated water sources were previously authorized, and are not re-evaluated as alternatives in this EA.

In summary, all but a few alternatives were eliminated because they do not meet the purpose of the proposed action, fail to reduce environmental impact or provide an environmental advantage, or are technically infeasible or unreliable.

### 2.3.2 Alternatives to the Proposed Action

Based on limitations imposed by lease stipulations, only a few exploration alternatives warrant further consideration at this time: (1) no action (2) primary access by air; and (3) pad access by packed snow trail with air support -- all previously evaluated.

#### Alternative 1 – No Action

Under the no-action alternative, exploratory drilling under CPAI's existing valid oil and gas

lease would not be allowed. CPAI's permit applications to BLM would be denied, and no access, drilling, or drilling support activities would occur on federal lands in the NPR-A.

#### Alternative 2 – Primary Access by Aircraft

Primary access by aircraft, as described in a previous evaluation,<sup>33</sup> is reconsidered in this EA. Hercules-type aircraft would be required for transporting the drill rig, other heavy equipment, and facilities. Smaller aircraft support would also be required on a regular basis. This alternative is reasonable to consider only if the main access road (previously authorized) is not constructed for other purposes.

Aircraft would land either on the existing Inigok gravel airstrip or a constructed ice airstrip. Local ice roads and pads, including access from the airstrip location, would still be needed, with minor, local overland transport involved in initiating ice construction and support activities. All other elements of design and operation would be essentially the same as the proposed action

Air traffic to and from the site would be substantially increased over the proposed action and North Slope Residents have complained about aircraft noise. Locally, water requirements would be increased if construction of an ice airstrip for large aircraft was required. The additional time required to assemble and disassemble an air transported rig may limit exploration to only one well. Emergency response would be by air or overland with approved tundra travel vehicles. Operations such as logistical support, spill response, and waste management would be more difficult and would increase air traffic. Restrictions on air travel due to bad weather conditions can persist for days. As a result, local storage needs would increase, and likely more pad area would be required.

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<sup>31</sup> EA: AK-020-00-011 and EA: AK-023-01-003. Section II.C.1.

<sup>32</sup> EA: AK 023-04-004, p. 2-6.

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<sup>33</sup> EA: AK-023-01-001. Section II.C.2.

**Alternative 3– Primary access by Packed Snow  
Trail with Air Support**

Pad access by packed trail with air support, as described in previous evaluations,<sup>34</sup> is reconsidered in this EA. In this scenario, only local ice roads to water sources would be constructed to support ice pad and ice airstrip construction. Personnel, equipment, supplies, and wastes would be transported via a hardened snow trail along any authorized access route. This alternative is reasonable to consider only if the main access road (previously authorized) is not constructed for other purposes.

A variation of this alternative includes hardened trail terminating at the existing gravel airstrip at Inigok, with a local ice road system connecting drill sites and water source lakes, similar to the TOTAL E&P USA Exploration program evaluated in 2003, which is incorporated by reference.<sup>35</sup>

Air traffic to and from the site would likely increase. Total water requirements would be reduced without construction of the full local ice road system. Emergency response would be by air or overland travel, using approved tundra travel vehicles. All other elements of design and operation would be essentially the same as the proposed action.

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<sup>34</sup> EA: AK-020-00-011, EA: AK- 023-02-004, and EA: AK-023-02-005. Section II.C.2.

<sup>35</sup> EA: AK-023-04-005. Section 2.1.1.

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**Figure 2      Drilling Locations with Access Routes**

### 3 AFFECTED ENVIRONMENT

The proposed NPR-A exploratory drilling operations, new access corridors, and water supply lakes are all in the Northeast Planning Area. The general project area and its proximity to existing oil and gas fields on the North Slope is shown on **Figure 3**. The affected environment has been described in detail in other BLM planning and assessment documents and in previous EAs prepared for exploration activity in the Northeast NPR-A Planning Area, all incorporated by reference.<sup>36, 37</sup>

#### 3.1 PHYSICAL CHARACTERISTICS

All proposed activities will take place on the Arctic Coastal Plain of the NPR-A, approximately 20-30 miles inland from the coast. Topography is generally flat to gently rolling, dominated by permafrost-related geomorphic features, including polygonal patterned ground, shallow lakes, and extensive areas of wetland interlaced with small, meandering streams. Surficial deposits of the general area are marine silts, sands, and outwash gravels, with permafrost ranging from 650 to 1,330 feet deep. The active thaw layer is typically 1 to 2 feet deep. Soils are typically wet throughout the area, although upland features such as pingos, sand dunes, and some river benches are well-drained.

For eight months of the year, temperatures average below freezing, making ice construction a feasible alternative to gravel construction. A dramatic change to higher temperatures and periods of long daylight is seen the other four months. Annual precipitation is low with more than half falling as snow. Snow cover is typically established in late September- October and disappears late May - mid June. Prevailing winds blow cold air from the Arctic Ocean. Recently, changes in weather patterns have reduced the winter exploration season from 208 days (1970) to 103 days (2002).<sup>38</sup>

The proposed drill pad locations are located in the western half of the Northeast Planning area, as were the two programs evaluated in 2003.<sup>39</sup> In *the Exploratory Soil Survey of Alaska* (Rieger, Schoephorster, and Furbush, 1970), two main soils types in the Planning area are divided between the eastern and western parts of the area.

According to Rieger et al, soils in the eastern part of the planning area tend to be more shallow over permafrost and constantly wet, with many small thaw lakes, low terraces, broad shallow, depressions and alluvial floodplains. The loamy, poorly drained soils have a thick cover of sedge tussocks, low shrubs, forbs, mosses and lichens. Very poorly drained fibrous peat soils occupy depressions, shallow drainage ways, and lake borders commonly under a thick cover of sedges.

The western part of the planning area is dominated by nearly level, low tundra dotted with shallow thaw lakes. There are many undulating sand dunes; most are stabilized by vegetation, but some adjacent to streams are still active. Most of the soils in this part are sandy eolian, alluvial, and marine deposits with a few forming in loamy sediment. The soils are poorly- drained with a shallow permafrost table in level areas and areas between sand dunes. Dune soils consist of eolian sand, and although they are perennially frozen below a depth of 30 to 40 inches, they typically do not retain enough moisture for large ice crystals to form. Kokoda 3 drill site is just inside the Pik Dunes LUEA, a basin containing five lakes that are part of a larger dune area that has been stabilized for at least several thousand years, as previously described.<sup>40</sup>

New access routes cross unnamed tributaries and channels of Kealok Creek and several unnamed streams. All authorized stream crossings, including those authorized in previous years, may continue to be used during the proposed five-year exploration program. Several elements of the proposed project are located in water-related special areas: Teshekpuk Lake Watershed LUEA and Fish Habitat LUEA.

CPAI has identified fifty-eight new lakes for water withdrawal, listed in **Table 6**. The volume

<sup>36</sup> 1998 IAP/EIS. pp. III-A-1 through III-A-60; III-B-1 through III-B-633; and III-C-1 through III-C-66. 2004 Draft Amended IAP/EIS. pp 3-53 –3-131.

<sup>37</sup> Section 3 or III of EAs cited in Table 2.

<sup>38</sup> G. Schultz, ADNIR. Tundra Access Symposium, sponsored by AOGA, ADNIR, and BLM. October 7, 2003.

<sup>39</sup> EA: AK-023-04-004 and EA: AK-023-04-005.

<sup>40</sup> 1998 IAP/EIS. p. 11-3.

authorized depends on depth and habitat value for fish. Ice aggregate may be removed from grounded ice on any approved lake.

Water quality data from potential water supply lakes are within the general ranges of water quality data discussed in the 1998 and draft 2004 IAP/EIS and reviewed by BLM in previous analyses. In all lakes, ions are excluded from water as it freezes, concentrating solutes in free water below the ice.

### 3.2 BIOLOGICAL RESOURCES

Biological resources in the project area within the NPR-A are described in both the 1998 and draft 2004 IAP/EISs<sup>41</sup> and in previous BLM assessment documents, all incorporated by reference.<sup>42</sup> Key elements are summarized below.

#### 3.2.1 Vegetation

The project area is located in the Arctic Coastal Plain, which is generally characterized as a mosaic of tundra wetlands with low relief. However, even small-scale relief features can influence vegetation patterns. Land cover in the Northeast NPR-A Planning Area has been mapped by BLM in cooperation with Ducks Unlimited, NSB, and USFWS. Land cover is classified into 17 cover types, shown below, with the percent cover in the Planning Area:<sup>43</sup>

##### WATER

1. Ice (2.2%)
2. Clear Water (10.8 %)
3. Turbid Water (8.4%)

##### AQUATIC

4. *Carex Aquatilis* (3.8%)
5. *Arctophila fulva* (0.4%)

##### FLOODED TUNDRA

6. Flooded Tundra LCP (6.5%)  
(LCP =low centered polygons)

7. Flooded Tundra NP (2.7%)  
(NP=non patterned)

##### WET TUNDRA

8. Wet Tundra (5%)

##### MOST TUNDRA

9. Sedge Meadow (10.1%)
10. Tussock Tundra (29.1%)
11. Moss Lichen (1.6%)

##### SHRUB

12. Dwarf Shrub (15.5%)
13. Low Shrub (1.7%)
14. Tall Shrub (0.1%)

##### BARREN GROUND

15. Sparsely Vegetated (0.5%)
16. Dunes/Dry Sand (0.7%)
17. Barren Ground/Other (e.g., clouds) (1%)

Ground cover in and around the proposed project is shown on Figure 2. It is similar to that described in detail in two previous environmental assessments, which are incorporated by reference.<sup>44</sup> Those analyses showed a variety of vegetation types present, with tussock tundra and sedge meadow dominating most segments, with dunes/dry sand areas increasing around some stream and lake margins and in the vicinity of Pik Dunes.

Several plant species are considered to be rare or sensitive within the Planning Area.<sup>45</sup> As used here, this classification can include species with small or declining populations or species for which there is little information or plant survey work. One such species (*Pleuropogon sabenei*, an aquatic grass) was reported to occur in the general vicinity of the Kokoda prospect.<sup>46</sup> Another (*Mertensia drummondii*, a bluebell) is known to occur on sand dunes along the Meade and Kogosukruk rivers. There are no threatened or endangered plants in the project area.

<sup>41</sup> 1998 IAP/EIS. pp. III-B-1 -- III-B-53. 2004 Draft Amended IAP/EIS Section 3.3, pp. 3-28 -- 3-56.

<sup>42</sup> See Exploration EAs cited in Table 2. Section III.B/3.B.

<sup>43</sup> 1998 IAP/EIS, Table III.B.2-1. 2004 Draft Amended IAP/EIS. Table 3-4, p. 3-30.

<sup>44</sup> EA: AK-023-04-004. pp. 3-2 through 3-6 and EA: AK-023-04-005. pp. 3-2 through 3-7.

<sup>45</sup> 1998 IAP/EIS. p. III-B-2. 2004 Draft Amended IAP/EIS. Section 3.3.2.1, p. 3-29.

<sup>46</sup> Mapped in North Slope Subarea Contingency Plan (Rare Plant Locations) and identified by Rob Lipkin, Alaska National Heritage Program. Pers. Comm. April 2003.

### 3.2.2 Fish and Wildlife

Fish typically found in lakes include lake trout, arctic grayling, Alaska blackfish, northern pike, longnose sucker, whitefish species, burbot, slimy sculpin, arctic lamprey, ninespine stickleback, and possibly threespine stickleback. Deep water lakes (deeper than 20 feet) in the Pik Dunes area may support lake trout at the northern limit of their habitat.<sup>47</sup>

The Applicant has proposed water withdrawal and/or ice harvesting from 58 lakes not previously permitted. CPAI surveyed these lakes and found that fish were found in 36 lakes and no fish found in the other 22 lakes. Lake trout were present in several lakes proposed for water withdrawal as well as one lake (B84059) proposed as an ice airstrip location. At the request of ADNR-OHMP, CPAI moved the proposed airstrip on B84059 to M0410. A second lake proposed for water withdrawal and airstrip location (M0305) had ninespine stickleback present. The third lake proposed for water withdrawal and airstrip location (R0076) may provide habitat for fish, although none were found during a 2000 lake inventory.

The proposed project crosses Kealok Creek and other unnamed streams and tributaries which support resident fish in the area of the proposed crossings. All new stream crossings were approved by ADNR Office of Habitat Management and Permitting (OHMP).<sup>48</sup> One lake proposed for airstrip location (R0076) is in the Fish Creek Fish Habitat LUEA. All of the Kokoda drill sites are in the vicinity of the Deep Water Lakes Fish Habitat LUEA, and several lakes proposed for water removal are also within the Deep Water Lakes Fish Habitat LUEA.

No site-specific baseline studies for bird habitat were undertaken because the project is limited to winter months, when avian populations of special interest (e.g., eiders, other waterfowl, and shorebirds) are generally absent from the North Slope. The few birds that might be present

during winter include owls, ravens, ptarmigan, and possibly gyrfalcon. Steller's eiders and spectacled eiders are listed under the Endangered Species Act. Neither species is known to be habitat-limited on the North Slope, has designated critical habitat on the North Slope, or is present during winter.

Wildlife that might be present during winter includes: Arctic fox, red fox, rodents, weasels, wolverine, over-wintering caribou, and possibly moose and musk ox. Caribou and polar bear are large mammals of special interest. Members of the Teshekpuk Lake Caribou Herd may be present in the project area during the winter. The calving area for this herd generally surrounds Teshekpuk Lake, north of the immediate project area. As early as late spring migration from overwintering areas to calving grounds; bulls and other females may remain on winter ranges until June.<sup>49</sup> Actual timing of spring migration varies from year to year.

The Defiance drill site and local access road (as well as part of the trail to the Trailblazer H-1 well proposed for P&A) are located in the Caribou Special Stipulation Area/Teshekpuk Lake Caribou Habitat LUEA. Lease stipulations designed to protect caribou resources in this area deal primarily with controlling access to avoid disturbance during spring migration and calving.

During winter, polar bears may be found near the proposed project area, primarily along the coast and down the Colville delta. Pregnant females come to shore in early winter to construct maternity dens. Polar bears commonly travel inland but don't usually go further than 20 or 30 miles. Grizzly bears typically hibernate in dens throughout winter, although occasionally individuals could be encountered during early or late phases of project activity. Grizzlies tend to den in river and lake banks, sand dunes, pingos, and gullies.<sup>50</sup> No active bear dens are known to occur in the project area. The applicant consults with ADF&G and USFWS to stay updated on location of bear sightings and active dens.

<sup>47</sup> Jack. Winters (ADF&G). Comments at TOTAL NPR-A Exploration Pre-application meeting. April 24, 2003, and Pers. Comm. November 7, 2003.

<sup>48</sup> Fish Habitat Permits issued November 19, 2004.

<sup>49</sup> 1998 IAP/EIS. p. III-B-41, Figure III.B.5.a-1, p. III-B-40.

<sup>50</sup> 1998 IAP/EIS. p. III-B-43.



### 3.3 SOCIOECONOMIC RESOURCES

Related socioeconomic resources are described in the 1998 and draft 2004 IAP/EIS documents and in previous BLM assessments which are incorporated by reference.<sup>51, 52</sup> National security, land use, subsistence, cultural and historical resources; scenic resources and recreation, and wilderness are described below.

National energy needs and U.S. dependence on foreign oil are key issues in authorizing exploration. The increasing reliance on foreign-produced oil is a challenge to U.S. security. The proposed drilling sites are located in and near a region considered to have high oil potential.<sup>53</sup> Federal lands in these areas have been determined suitable for oil and gas activities, such as those proposed.<sup>54</sup>

The economies of the State and the NSB are heavily dependent on oil and gas revenues. Sources include lease bonuses and rentals, production royalties, corporate income taxes, NSB property taxes, and employment, as previously described and incorporated by reference.<sup>55, 56</sup>

Residents of both Nuiqsut and Barrow use the general project area for subsistence.<sup>57</sup> Nuiqsut has about 400-450 residents, with a substantial subsistence economy, supplemented by employment in local construction and nearby energy production jobs. Barrow, a community of about 4,500 is a regional center and the seat of local government, also supporting a subsistence economy. Primary subsistence resources used by both communities include caribou, moose, birds, and fish.

The Applicant has located project elements to avoid impacting subsistence resources, cultural resources, and historic/prehistoric sites.

CPAI and BLM have consulted with local residents, the NSB, the Inupiat Community of the Arctic Slope (ICAS), the Kuukpik Subsistence Oversight Panel (KSOP), and the NPR-A SAP to ensure that the proposed project does not unreasonably restrict access to subsistence resources and protects cultural and historical sites. Site investigations by professional archaeologists and coordination with the BLM and NSB have identified archaeological sites in the area, but the proposed facility/access locations appear to be sufficiently offset to avoid impacts.

The project area has little visual variety, contrast and harmony.<sup>58</sup> The area is not associated with a designated Wilderness Area or a designated Wilderness Study Area. No affected rivers are included in the National Wild and Scenic Rivers System.

The project area is flat, wet, and remote, with only a few private cabins and former drill sites. There are no known commercial recreation businesses and no developed commercial or public recreation facilities.

There is a limited opportunity for primitive recreation; however, the expense and demands of travel to the area result in very little recreational use. Extremely limited to no winter recreational use by other than local residents is documented or expected, due to harsh weather, limited daylight, and easier access to more scenic areas. Cabins are sometimes accessed by snowmobile. For the most part, however, cabins, campsites, and lakes are largely inaccessible until late summer when wheeled vehicles, boats, and light aircraft are used for access. Inland waterbodies also tend to be shallow and isolated, which is not conducive to recreational boating.

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<sup>51</sup> 1998 IAP/EIS. pp. III-C-1 through III-C-61.

<sup>52</sup> EA: AK-020-00-011. pp. III-5 to III-7. EA: AK-023-01-003. pp. III-6 to III-7.. EA: AK-023-02-005. pp. III-5 through III-8.

<sup>53</sup> 1998 IAP/EIS. Figure III.A.1.a(3)-11. p. III-A-29.

<sup>54</sup> 1998 IAP/EIS ROD. 1998.

<sup>55</sup> EA: AK-023-02-005, pp. III-6 and III-7.

<sup>56</sup> Draft Amended NE NPR-A IAP/EIS. Section 3.4.9.

<sup>57</sup> 1998 IAP/EIS. Figure III.C.3-1. p. III-C-8.

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<sup>58</sup> 1998 IAP/EIS. p. III-C-55.

**Figure 3      North Slope Oil and Gas Fields**

## 4 ENVIRONMENTAL IMPACTS

The proposed project would be the ninth winter exploration drilling program under the 1998 IAP/EIS and ROD. If authorized, it would be the Applicant's sixth consecutive winter exploration program in NPR-A.

All authorized winter exploration drilling programs have used similar technologies and equipment operating in similar habitats. All have been approved and monitored on the basis of full implementation of all relevant stipulations contained in the 1998 ROD as well as state and local permits and compliance with enforceable standards of the NSB Coastal Management Program (CMP), where applicable. Table 7 summarizes exploration programs on federal land within the NPR-A since 1999.

To date, authorizations to conduct winter exploration for oil and gas resources in the NPR-A Northeast Planning Area have resulted in no long-term significant impacts to the environment or access to/use of subsistence resources. The 79 stipulations in the ROD provide sufficient environmental protection within the Northeast Planning Area.

The ROD also allows for granting exceptions to stipulations under a set of strict conditions. This option allows the AO to consider technical and economic feasibility and potential environmental advantages of alternatives, as long as the alternative fully satisfies objectives of the stipulation. In making an exception, the AO shall consult with appropriate regulatory and resource agencies.<sup>59</sup>

The proposed exploration program:

- Incorporates all relevant decisions made in the IAP/EIS and ROD.
- Comprises the general scope of exploration activities evaluated in the IAP/EIS.
- Reflects the experience gained during similar operations in the NPR-A and along the North Slope on lands managed by the State of Alaska.

### 4.1 ASSUMPTIONS

Assumptions of this EA have been discussed in Section IV.B of EA: AK-023-01-003, which is incorporated by reference.

*Assumption 1: When applied to the proposed action, management decisions and stipulations of the 1998 ROD provide significant protections to surface resources and human uses in the NPR-A.*

*Assumption 2: Of the 16 designated LUEAs and Special Areas, portions of only five are directly or indirectly involved in the proposed action. Approved technologies and permit stipulations avoid significant adverse impacts.*

*Assumption 3: The proposed action has no significant potential to adversely impact the marine environment.*

### 4.2 CRITICAL ELEMENTS

BLM guidelines for environmental assessment include "Critical Elements" to consider in evaluating project impacts. The EA is not limited to only those strictly described elements and will address other elements specific to the proposed action, as shown in Table 8 and incorporated in the discussion of project-specific impacts.

### 4.3 ENVIRONMENTAL CONSEQUENCES

The proposed action is built on experience gained from decades of similar operations on the North Slope. This EA is tiered to the 1998 IAP/EIS, 2004 Draft Amended IAP/EIS, portions of the 2004 Northwest Planning Area IAP/EIS, and previous EA's that focus on issues and potential impacts of the proposed action.

#### 4.3.1 Project-Specific Impacts

This analysis is based on potential direct and indirect impacts associated with affected critical elements and other issues of concern specific to the proposed project, as defined and discussed in the following text. Stipulations that eliminate, reduce, or otherwise mitigate related impacts are cited in each analysis. Where applicable, the analyses tier to and incorporate by reference related NEPA documents available for review through the BLM Northern Field Office in Fairbanks, Alaska.

<sup>59</sup> 1998 IAP/EIS ROD, p 7.

**Table 7. 1999-2004 Exploration Drilling Activity on Federal Land in the NPR-A**

TOTAL for 5Exploration Seasons		Evaluated	Actual Activity
Ice drill pads	number	60 (358 ac)	18 (108 ac)
Ice storage pad (over-summer)	number	2 (23 ac)	1 (11.5 ac)
Ice road <sup>a</sup>	miles	>400	195
Overland Trail ROW <sup>b</sup>	miles	>540	420
Wells (with sidetracks)	number	147	17 + 1 sidetrack
Ice airstrip	number	15	4
Water supply lakes <sup>c, d, e</sup>	number	253	90
Water use <sup>f</sup>	MG	1804	353

Mileage and acreage values estimated for comparative purposes.

a – Total length of ROW and on-lease ice roads approved.

b – Total length of ROW and on-lease trails approved.

c – Lakes on federally-owned land within NPR-A.

d – Includes lakes authorized for ice aggregate removal.

e – Includes, but does not duplicate, lakes authorized for more than one user.

f – Does not include separate volume for ice aggregate withdrawal.

**Table 8. Elements of this Environmental Assessment**

Critical Element	May Be Affected	Can Be Mitigated
1. Air Quality	Yes	Yes
2. Areas of Critical Environmental Concern	None	NA
3. Cultural Resources	Yes	Yes
4. Farmland, Prime or Unique	None	NA
5. Flood Plains	Yes	Yes
6. Invasive/Non-Native Plants	NA	NA
7. Native American Religious Concerns	Yes	Yes
8. Threatened or Endangered Species	Not Expected	Yes
9. Waste, Hazardous or Solid	Yes	Yes
10. Water Quality	Yes	Yes
11. Wetlands / Riparian Zones	Yes	Yes
12. Wild and Scenic Rivers	None	NA
13. Designated Wilderness Areas	None	NA
14. Environmental Justice	No	NA
<b>Other Important Elements</b>		
Adverse Energy Impact	No	NA
Wildlife	Yes	Yes
Fisheries	Yes	Yes
Local Land Use and Subsistence	Yes	Yes

NA – Not applicable to the proposed action.

None – Element not present in project area; therefore, no related impacts will result from proposed action.

Project-specific issues discussed in this section have been grouped as follows:

- Air Quality
- Hazardous Materials, Solid Wastes, and Spills
- Cultural and Paleontological Resources
- Disturbance to Floodplains, Wetlands, Riparian Zones and Vegetation
- Threatened and Endangered Species, Polar Bears, and other Sensitive wildlife
- Water Resources and Potential Impacts to Water Quality, Fish, and Waterfowl
- Local Land Use and Subsistence
- Scenery/Wilderness/Primitive Recreation Opportunities
- Environmental Justice
- Adverse Energy Impacts

#### Air Quality

**Related Stipulations:** Managed under state and federal regulations

**Discussion Incorporated by Reference:** It is expected that any emissions generated by the proposed action under an approved ADEC air quality permit will not cause a significant deterioration of air quality. Related discussion on air quality issues and potential impacts is presented in Section IV.D.1 of EA: 023-01-003 (p. IV-15/16) as well as Section IV.G.5.b of the 1998 IAP/EIS (p. IV-G-14/15) and Section 4.3.1 of the 2004 Draft Amended IAP/EIS.

**Analysis of Proposed Action:** CPAI will operate under statewide Permits by Rule or a General permit, which limit conditions and duration of drilling and well testing, and if needed, address emissions from certain fuel storage tanks. The area is a Class II Area, which allows for an incremental decrease in the air quality. Use of low-sulfur fuel eliminates the need for an exclusion zone to restrict access of unauthorized personnel, although exclusion zones have been allowed by both ADEC and the EPA in other North Slope exploration permits, and accepted by BLM for exploration drilling and well testing in the NPR-A. In addition, the NPR-A is “reserved” from public lands and public access is already limited.

Proposed operations are temporary and restricted to the winter season when plants are dormant and snow-covered and surface water is frozen. There are no recreation facilities or documented winter recreation activities that would attract people to the area. Any impacts to wildlife would be short-term, temporary, and have no expected consequence. Impacts to visibility, if any, are also expected to be minor and temporary. No long-term or significant effects on air quality are expected.

#### Hazardous Materials, Solid Wastes, and Spills

**Related Stipulations:** Managed under state and federal regulations and stipulations 1-12, 14-17, 28, 58, 63, 65, 70, 71

**Discussion Incorporated by Reference:** The extent of environmental impacts from accidental release would depend on the type of materials spilled; size and location of the spill; underlying substrate; effectiveness of response; and site rehabilitation success. The tundra and all waterbody surfaces should be frozen throughout the proposed action, with spills typically restricted to the ice surface, where they can be effectively cleaned up. Potential impacts from spills are discussed in the 1998 IAP/EIS (p. IV.A.33 through IV.A.41), the 2004 Draft Amended IAP/EIS (Section 4.2.2.2) and Sections IV.D.1 of EA: AK-020-00-011, EA: AK-023-01-003, and EA: AK-023001-001, all incorporated by reference.

**Analysis of Proposed Action:** The proposed action is very similar to previously approved exploration programs in the NPR-A. Stipulations 1- 9 require the applicant to have a Waste Management Plan and Hazardous Materials Emergency Contingency Plan, as well as specialized training and procedures for waste management. CPAI has an ODPCP approved by ADEC, demonstrating the capability to control, contain and cleanup any expected release. SPCC Plans are required for well drilling and testing contractors, under EPA regulations. The approved ODPCP and SPCC Plans will be accepted by BLM as meeting the lease stipulation for spill planning. CPAI will comply with all stipulations for fuel and chemical transportation and storage using a combination of existing plans and approvals for spill response, waste handling, tracking, and disposal on the North Slope.

The greatest potential threat would be from a blowout that continued into breakup. Based on North Slope records and current drilling technology, a blowout is considered a very low probability event. Modeling the ODPCP worst-case response planning standard (i.e., blowout) indicates that such an event could potentially include several sensitive areas. The Defiance well site lies within the Caribou Habitat Land Use Emphasis Area (LUEA) and the Teshekpuk Lake Special Area/Watershed LUEA. Kokoda 3 lies within the boundary of Pik Dunes LUEA and the Teshekpuk Lake Special Area/Watershed LUEA. Kokoda 4 and Kokoda 5 are also inside the Teshekpuk Lake Special Area/Watershed LUEA. Kealok Creek is less than a mile from Bounty, but impacts to this waterbody are limited as there is limited potential for a major release to reach the creek. There is no direct waterbody connection between the drill site and the creek, and a spill would occur when the ground is snow-covered and frozen. These conditions facilitate containment and cleanup and should prevent any appreciable amount from reaching the creek.

The ODPCP limits the drilling period to better ensure that spill cleanup activities are largely confined to winter conditions. Additionally, protective environmental stipulations require exploratory drilling to be completed when waterbodies are frozen and the ground is snow-covered, substantially limiting the potential for impacts from a spill. Spilled product thawing through the ice/snow and or cleanup procedures could also result in impacts to tundra, water quality, or aquatic habitat. Tundra impacts might include soil contamination, vegetation damage, wildlife injury, or surface disturbance (e.g., traffic, excavation). Lake impacts would likely persist longer than stream impacts.

No fuels will be stored on waterbodies, and on-site storage will have secondary containment. Fuel-powered equipment will have appropriate environmental protection in place. Wastes will be transported out of the NPR-A for disposal at permitted facilities. Ice road monitors are assigned to keep ice roads and pads clean. Spills will be promptly reported and cleaned up. Subsistence Reports note no major spill-related issues during previous drilling seasons.

## Cultural and Paleontological Resources

**Related Stipulations:** 1, 24h-j, 26, 27, 62d, 62e, 62h, 63-65, 67, 74

### Discussion Incorporated by Reference:

Considerable discussion on this subject is included in the 1998 IAP/EIS (Section IV.G) and the 2004 Draft Amended IAP/EIS (Sections 4.4.2 and 4.4.11). Previous analyses concluded that during winter when the ground was frozen and there were no surface disturbing activities, subsurface cultural resources were “usually safe from disturbance.” However, there is “somewhat greater risk” of damage to cultural resources on the surface if there is inadequate snow cover. Paleontological resources, usually protected by deep burial in permafrost, would also be protected by adequate snow cover.

**Analysis of Proposed Action:** Cultural surveys (air and ground) at proposed drill sites and along ice road and snow trail corridors were completed by a qualified professional archaeologist, who also makes note of paleontological resources. Findings have been submitted to the SHPO, NSB, and BLM, but are not identified in this EA due to the sensitive nature of the information.

Disturbance of vegetation on sandy soils can expose unknown archaeological sites that were previously covered over by vegetation. Most archaeological sites in the region are located on well drained elevated ground (e.g. sand dunes). Once exposed, sites can then be impacted by natural agents such as wind and water erosion.

Results of cultural resources surveys, along with proposed use of ice construction and low surface impact ATVs, collectively support the conclusion that cultural and paleontological resources have been provided adequate protection, and that no adverse impacts are expected from the proposed action. The proposed action fully complies with requirements of the NHPA of 1966.<sup>60</sup>

<sup>60</sup> Reanier and Associates Cultural Clearance Letter dated 9/19/2004.

## **Disturbance to Floodplains, Wetlands, Riparian Zones, and Vegetation**

**Related Stipulations:** 1, 3-5, 7-12, 14-16, 18-22, 24c-n, 27, 28, 45, 62a-e & h, 63, 65, 67, 70

**Discussion Incorporated by Reference:** The 1998 IAP/EIS (pp. IV-G-16 through 18) describes reasonably-expected ground disturbance from overland winter travel, ice roads, ice pads, and well cellars as relatively minor and often temporary, and this discussion is incorporated by reference. The 2004 Draft Amended IAP/EIS (Sections 4.3.5 and 4.3.6) includes similar discussion of potential ground disturbance from exploration activities, incorporating results and observations from the past four years of exploration in the Northeast Planning Area. The Alpine Satellite Development Plan Final EIS provides additional findings of a similar nature (Section 4A, pp. 417, 512, and 513), which are also incorporated by reference.

Applicable stipulations prohibit construction of permanent facilities and use of gravel for oil and gas exploration. Compliance with EO 11988 and EO 11990 are discussed in EA: AK-020-00-011 (pp. V-14 through IV-16), which is incorporated by reference and summarized below.

**Analysis of Proposed Action:** The only direct surface-disturbing activity expected is *de minimis* acreage lost to construction of well cellars. Ice roads and ice pads may occupy up to 175 acres of federal land over the five year project term.

In general, ice pads and roads create few lasting impacts to tundra vegetation while minimizing potential impacts from exploration activity and spills. There could be some accidental crushing and scraping of the tundra surface during ice road/pad construction. Vegetation may be matted, bent, broken or removed. Compaction of the surface can alter drainage and thermal regime, depending on location and extent.

Single season ice structures do not physically change the ground surface, although there may be minor, temporary alteration of surface vegetation (e.g., compression, greening or browning) with significant recovery expected within a few years. There may also be differences in the mean active

layer depth under ice roads constructed under different conditions. Multi-season ice structures may have more severe and longer-term impacts, as described previously.<sup>61</sup>

Active operations will occur only during winter, when soils, wetlands, and riparian habitat are frozen. The AO will determine when there is adequate snow cover and frost penetration for winter activity. Due to the importance of ice construction to North Slope operations, agencies and operators continue to study impacts of winter tundra travel, as previously discussed and incorporated by reference.<sup>62</sup> New data analyses, modeling, and field trials support new parameters for determining adequate ground strength for overland travel and ice road construction.<sup>63</sup>

On November 3, 2004 ADNR authorized CPAI to pre-pack the ice-road route along state lands to the NPR-A this winter.<sup>64</sup> The NSB has also authorized CPAI to pre-pack the ice road to expedite the penetration of frost.<sup>65</sup>

A new 8-mile packed snow trail is proposed; and, previously approved routes may continue to be used over the 5-year span of this project. Impact to wetlands and riparian vegetation, and underlying soils due to travel via packed trail will vary according to the type and number of vehicle trips and vehicle loading, as well as soil type, ground cover, and snow conditions. Where snow cover is too thin, variable disturbance to tundra vegetation and the soil thermal regime may occur. Improved trail packing techniques and use of low ground pressure vehicles have resulted in fewer impacts; however there still may be site-specific impacts along multiple trails per season. Impacts will vary based on vegetation type, vehicle type and loading, and volume and timing of traffic.

To study related surface effects, BLM and other agencies and operators have sponsored a number of off-road tundra travel investigations. Results are

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<sup>61</sup> EA: AK-023-04-004. pp 4-6.

<sup>62</sup> EA: AK-023-04-004. pp 4-5 and 4-6.

<sup>63</sup> Tim Bradner. "Exploration season may grow", Alaska Journal of Commerce, October 3, 2004. p A-1.

<sup>64</sup> G. Schultz, ADNR e-mail to S. Rothwell, CPAI. November 3, 2004.

<sup>65</sup> NSB Permit No. 03-051. October 29, 2002.

discussed in detail in the ASDP FEIS and in two recent exploration-related EAs, incorporated by reference.<sup>66, 67</sup>

Typically, disturbance is negligible to low, with higher levels of disturbance in low willow shrub and dwarf shrub tundra. High levels of disturbance from overland travel may occur on ridges of ancient stabilized dunes and on thinly vegetated sand bars along streams in areas of relatively dry sand. Recovery time is unknown. As a general rule these sandy areas are avoided to the maximum extent practicable because they can provide unstable foundations for travel and ridgetops tend to have less snow depths due to winds.

Some tundra travel impacts are expected to occur despite existing stipulations, and further mitigation is not presently practicable. The yearly repetition of overland moves or ice road construction on the same trails could worsen the impacts. The current stipulation (24i) matches the statewide requirement that has been in place for over 40 years. Based on observation of tundra impacts over the past few decades and recent demonstration data, less than 12 inches frost/6 inches snow cover may provide sufficient protection for tundra travel and ice road/pad construction, under certain conditions. Increased understanding may lead to more flexibility, without increased risk of surface impact.

In an ongoing effort to reduce impacts of tundra travel, workshops have been held regularly to review related technology and methods with agency personnel, technical experts, NSB residents, and project personnel. As a result, tundra travel standards and practices are under reconsideration. New data and increased understanding may lead to more flexibility, without increased risk of surface impact from tundra travel.

ADNR recently completed a study about the over all level of change in two community types. The project found that in wet sedge tundra on the coastal plain, ground hardness and snow slab thickness were the most important factors in limiting disturbance. In tussock tundra, only snow cover appeared to play an important role in

limiting disturbance. Once certain thresholds for ground hardness, snow slab thickness, and snow depth are attained, it appears that little or no additive effect is realized regarding increased resistance to disturbance in the tundra communities studied.<sup>68</sup> There has been no request for a variance from Stipulation 24i for the proposed project.

Travel across floodplains also involves stream crossings; although the proposed project does not require any major ice bridges. Most proposed stream crossing sites are expected to be frozen to the bottom. There is expected to be minimal impact to the streambed, stream banks, or protective shoreline vegetation along the ice road route. Impacts may be greater along crossing routes where the banks are sandy and well-drained (susceptible to scuffing and gouging). Impacts to stream bank shrubs (e.g., willows) include broken and dead limbs and delayed greening (under ice roads). Repeated use of the same site would likely worsen the level of impact. Methods to reduce impacts to willows are under study.<sup>69</sup>

The bluebell *Mertensia drummondii* is known to occur on sand dune habitat along the Kogosukruk River (Northeast Planning Area). If present, these and other plants found in sandy substrates could be impacted. Snow trail routes are selected to minimize topographic relief. Accordingly, impacts to vegetation are expected to be localized and minor.

Mitigation measures incorporated in the proposed action should protect soils, wetlands, and riparian zones from significant impacts. Since most of the NPR-A coastal plain is classified as wetlands, there is no practicable upland alternative. All facilities will be short-term and temporary. The proposed action will incorporate all practicable steps to minimize impacts on wetlands and floodplains, complying with EOs 11988 and 11990.

One potential drill site is located just within the northwestern portion of the Pik Dunes LUEA. Access to this drill site will require approximately 0.5 miles of ice road with the LUEA. Protective

<sup>66</sup> ASDP FEIS. Vol. I. pp. 513-514.

<sup>67</sup> EA: AK-023-04-004. pp 4-6 and 4-7.

<sup>68</sup> ADNR Tundra Travel Modeling Project at <http://www.dnr.state.ak.us/mlw/tundra/>.

<sup>69</sup> Draft Proceedings of Workshop on Impacts of Winter Exploration Activities on Tundra Soils and Vegetation of Alaska's North Slope. BLM. January 14-15, 2003.



measures of Stipulation 24 and 45 were discussed in a previous EA.<sup>70</sup> Construction avoiding the steeper unstable dune areas should not impact the unique features of the active, exposed dune/lake complex.

#### **Threatened and Endangered Species, Polar Bears, and Other Sensitive Wildlife**

**Related Stipulations:** 2, 3, 24a, 51, 57, 76, 77.

Stipulations also applicable to Defiance and Trailblazer H-1 include 24k, 50, 52, 54, and 55.

#### **Discussion Incorporated by Reference:**

Exploration drilling activity takes place in winter, when spectacled and Steller's eiders, the only two local species listed under the ESA, are absent. Consequently, there will be no impacts to these species from disturbance. Related discussion is presented in the 1998 IAP/EIS (pp. III-B-48 to III-B-53), and Section III.B and Section IV.D.1 of EA: AK-020-00-011 and EA: AK 023-01-003, incorporated by reference.

Although the polar bear is not listed under the ESA, CPAI has developed a number of federally and locally approved polar bear plans as part of normal North Slope winter operations. Grizzly bears may be in the vicinity of the proposed project. Exploration activities at Defiance and well closure activity at Trailblazer H-1 are within the Special Caribou Stipulation Area/ Teshekpuk Lake Caribou Habitat LUEA. The 2001 BLM FONSI and Decision Record AA-081752 concluded that exploration activities in this special area would have no significant environmental impacts on caribou when completed in compliance with applicable stipulations. Other related discussion is in the 1998 IAP/EIS (pp. III-B-46 and pp. IV-G-37 and IV-G-38) and EA: AK-023-01-001 (p. IV-19), incorporated by reference.

**Analysis of Proposed Action:** No "critical habitat" has been designated for spectacled or Steller's eiders in the project area, and no eider habitat is expected to be adversely affected. Consultation with the USFWS under Section 7 of the ESA has been completed for the two listed species of eiders.<sup>71</sup>

<sup>70</sup> EA: AK-023-04-005. pp. 4-7 and 4-8.

<sup>71</sup> Concurrence by USFWS on 11/29/2004.

CPAI has a polar bear avoidance and encounter plan approved by USFWS. There is no known grizzly bear denning habitat associated with the proposed project; however the potential for impacts is still present since all den sites are not known. Individual bears may also be present with the potential for disturbance by project activities. Impacts to wildlife include loss or damage of habitat and altered patterns of habitat use (e.g. noise and traffic disturbance). Since animals are mobile and operations are seasonal, no lasting adverse impacts to bear, caribou, moose, muskoxen, or other furbearers in the area are expected.

Any direct or indirect adverse impacts to local wildlife populations are expected to be localized, minor, and short term (e.g., startling and temporary displacement of individuals). This assessment is consistent with results of compliance monitoring in previous exploration activities in the project area. Additionally, the applicant will protect wellheads from providing nesting, denning, or shelter sites for ravens, raptors and foxes.

There is no known documentation that ice roads or overland trails have shifted the general abundance or distribution of caribou, small mammals, birds, other wildlife or their habitats. Some local residents have reported displacement of caribou and furbearers from the vicinity of seismic operations. The limited presence of birds and other wildlife in the winter should reduce the risk of impacts to low levels. The Applicant will have plans in place to minimize harassment, displacement, attraction or injury of wildlife. Due to the inland location, no impact to bowhead whales, other marine mammals, seabirds, or their habitats is expected.

#### **Water Resources and Potential Impacts to Water Quality, Fish, and Waterfowl**

**Related Stipulations:** 1, 3-12, 14-22, 24c-e, 24h-j, 24m-n, 26-28, 59-65, 67, 70, 71

**Discussion Incorporated by Reference:** Potential impacts to fish, waterfowl, and water quality were previously described and evaluated in EA: AK-020-00-011 (pp. IV-4 through IV-7) and EA: AK-23-01-003 (p. IV-5 through IV-8), which are incorporated by reference.

Previous evaluations have produced no evidence of adverse effects to fish due to water quantity or water quality. Lake recharge studies and anecdotal information from several North Slope residents indicate that spring recharge has been sufficient to replace volumes withdrawn during the rest of the year.<sup>72</sup> CPAI Subsistence reports also indicate that waterbodies have been protected from impacts of surface use and spills.

**Analysis of Proposed Action:** Lake water quality data is within the expected range of North Slope waters. It is noted though, that even at a relatively light load of chloride (e.g., 25 mg/L), the salts could become quite concentrated in free water under the ice. However, the high degree of dilution at breakup should mitigate any potential effects of salinity on local biota associated with the ice road.

CPAI identified a project need of an estimated 80 MG of water for the 5 year exploration program. On December 8, 2004 ADNRP approved an increase in total volume withdrawal from 54 MG to 80 MG.

Stipulation 20 is particularly important for protecting water resources and aquatic habitat for over-wintering fish, including lake trout in some of the deeper lakes. Ice construction methods (e.g., shaving grounded ice, appropriate screening at hose intake) also minimize impacts on fisheries.

On November 19, 2004, OHMP approved water withdrawal of up to 30 percent of the unfrozen water below 5 feet on lakes containing only ninespine stickleback. On lakes over 7 feet deep that support multiple species of fish, OHMP approved water withdrawal of up to 15 percent withdrawal of the unfrozen water below 7 feet of ice. The more stringent restriction to 15 percent of the free water under the ice is implemented to protect sensitive fish species (e.g., subsistence fish). Ice aggregate removal is restricted to areas of naturally grounded ice in fish-bearing lakes. No limits were placed on non fish-bearing lakes.

CPAI has requested an exception to Stipulation 20 from BLM for M0305 to increase water withdrawal to 30% under 5 feet of ice. For lake L9817, which is a research lake, CPAI has requested an exception to

withdraw up 15.3 MG, which would leave the State permitted minimum of two feet of free water.

Currently CPAI, the BLM, the State and the University of Alaska are cooperating in a research project using lake L9817. The objective of this research is to determine the effects of winter lake withdrawals on lake water quality parameters, fish species and fish habitat. The research is based on observations that indicate catch rates of ninespine stickleback and Alaska blackfish in some shallow NPRA lakes that had been used heavily as winter water sources (e.g. L9817)<sup>73</sup> were not different from shallow lakes that were not used as water sources.<sup>74</sup>

BLM generally defers to the State OHMP for decisions on water withdrawal and impacts on the fish habitat value of lakes determined by fish survey.

Removal or compaction of snow cover can increase the depth of freezing, reducing the quantity and impacting the quality of water under the ice. As in previous years, a minimal amount of snow will be cleared from all fish-bearing lakes approved for water use. Snow removal from non-grounded portions of fish-bearing lakes must be approved by BLM and OHMP on a case-by-case basis. Stream crossings must also be approved by OHMP.

Wastewater will be treated and discharged under NPDES permit or hauled off site for disposal. Fuel and material handling practices should generally protect lakes from potential pollution. Defiance 1 is less than 0.5 miles from a small drainage that appears to flow (approximately 6 miles) into Teshekpuk Lake. Several drill sites are within a mile of Kealok Creek, which also flows into Teshekpuk Lake. There is limited potential for a major release at these drill sites to reach Kealok Creek or Teshekpuk Lake. However, a spill would occur when the ground is snow-covered and frozen, which facilitates containment and cleanup and should prevent any appreciable amount from reaching either waterbody. The approved ODPCP,

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<sup>72</sup> ASDP FEIS, Vol I. pp. 428-434.

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<sup>73</sup> Up to 17 MG had been withdrawn under previous authorizations in a single season with no apparent adverse affects. OHMP has approved water withdrawal as long as two feet of water remain, which equates to a water withdrawal of approximately 15.3 MG.

<sup>74</sup> Water Withdrawal Effects on Ninespine Stickleback and Alaska Blackfish. L.L. Moulton. 9/24/2002.

including the mandated “end date” for drilling, will help ensure that required cleanup would occur under winter conditions to the extent practicable.

The proposed action includes possible water withdrawal and ice road connections in the Deep Lakes LUEA, which has been evaluated as part of an overall Fish Habitat LUEA that provides important spawning, migration, rearing, and overwintering habitat for fish.<sup>75</sup>

Site inspections and oversight by CPAI’s local Subsistence Representative will help identify and mitigate potential impacts to Fish Habitat LUEA. Improved water withdrawal methods, and equipment monitoring will provide additional fish protection. Fuel and materials handling practices, along with spill response and containment measures will also protect LUEAs from potential pollution. The only expected impacts to fish habitat will be possible short-term, temporary habitat stress from water withdrawal.

In summary, expected impacts of water withdrawal to water quality, fish or wildlife should be minor, localized, and temporary.

BLM has determined that the proposed actions “*may affect, not likely to adversely affect,*” Essential Fish Habitat. Additionally, no adverse impacts to waterfowl habitat have been reported as a result of building ice roads over the past several decades, including several years of ice road and pad construction in the Colville River area and the Northeast NPR-A.

#### Local Land Use and Subsistence

Related Stipulations: 1-26, 49-55, 57, 59-64, 67, 73

**Discussion Incorporated by Reference:** Alaska is unique in that local land uses, including subsistence, are strongly tied to cultural values. These values have been discussed in previous environmental impact analyses and their associated FONSI, including the ANILCA Section 810 findings.<sup>76</sup> These evaluations address actions

considered comparable to the proposed action, and related discussions are incorporated by reference.

**Analysis of Proposed Action:** The proposed project involves winter activity in an area with high subsistence value. The importance of subsistence has been a general topic at all meetings with local residents. The NPR-A SAP typically meets quarterly and advises applicants and BLM on potential conflicts between proposed development actions and subsistence activities. Additionally, a Subsistence Plan is required for each exploration program (Stipulation 59).

In previous years, the CPAI plan has included a local Subsistence Representative to identify and help mitigate potential impacts on subsistence. The required biannual reports have indicated nothing more than minor displacement of caribou one winter and essentially no direct impacts to subsistence the other four winters of CPAI exploration activity.<sup>77</sup> At community meetings concern is expressed about exploration activities moving closer to the communities. The proposed project avoids known Native Allotments, long-term cabin and campsites, and TLUS.

It is expected that the proposed multi-year winter exploratory drilling program will not substantially impact subsistence resources or restrict use of, or access to, subsistence resources. The project will occupy the smallest practicable amount of land determined necessary, on only a temporary basis. Stipulations and other protective measures will help mitigate impacts on subsistence. Impacts will be re-evaluated based on the subsistence reports filed after each season of proposed exploration activity.

<sup>75</sup> EA: AK-020-00-011, EA: AK -023-01-003, and EA: AK – 023-02-005. Section IV.D.1.

<sup>76</sup> Exploration EAs in Table 2. Section IV.D, and their related FONSI documents.

<sup>77</sup> November Subsistence Report, NPR-A Exploration, ConocoPhillips Alaska, Inc. May 2000-2004.

### Scenery/Wilderness/Primitive Recreation Opportunities

**Related Stipulations:** 1-12, 14-22, 24, 26-28, 51, 56, 57, 59-65, 67, 70, 72, 73, 75, 76

**Discussion Incorporated by Reference:** The project area is predominately low-relief wetlands, with little visual variety, contrast, or harmony. No designated Wilderness Area or designated Wilderness Study Area is involved. BLM has no record of commercial recreation services using the general vicinity during the winter. No existing or planned public recreation facilities are associated with the project area. A discussion on local recreation values was included in Section IV.D.1 of EA: AK-023-01-003, and its resulting FONSI, which are incorporated by reference. Additional discussion on related wilderness values of the NPR-A is incorporated from the 2004 Draft Amended Northeast NPR-A IAP/EIS (Sections 3.4.6.2 and 3.4.6.3).

**Analysis of Proposed Action:** The proposed project does not provide long-term access, which could impact on naturalness, wilderness values/attributes, or scenic resources. Some localized noise, air pollution, and visibility of industrial activity will adversely affect values of solitude, quietude, and the natural appearance of the winter landscape, but these effects are short-term and are not expected to degrade primitive winter or summer recreation to any notable degree. The tundra may appear different (e.g., greener, browner) under melted ice road/pads, especially when viewed from the air. This effect may persist for multiple seasons, but is not permanent and seems to have no functional effect on land use.

### Environmental Justice

**Related Stipulations:** Governed by EO 12898 (See discussion on Subsistence.).

**Discussion Incorporated by Reference:** Federal agencies are required to identify and address actions that would have disproportionately high and adverse human health and environmental effects on minority and low-income populations. Alaska Native landowners and residents could be directly affected by the proposed action.

No disproportionately high and adverse human health or environmental effects on minority or low-income populations are expected, as discussed in the IAP/EIS<sup>78</sup> and in Section IV.D.1 of EA: AK-023-01-003, incorporated by reference. Numerous stipulations and other protective measures will help mitigate impacts on these groups of people in the project area. Additionally, employment opportunities are available (but not restricted) to residents of Nuiqsut and Barrow because they are most conveniently located to the project area.

**Analysis of Proposed Action:** Subsistence resources provide an important source of food for North Slope residents. Consequently, impacts to subsistence have a direct relationship to the analysis of impacts that may have a disproportionately adverse effect on minority and low income populations. The previous discussion on Subsistence concludes that the proposed multi-year winter exploratory drilling program is not expected to substantially impact subsistence resources or restrict use of, or access to, subsistence resources.

The proposed action involves potential economic gains at multiple levels: direct employment and utilization of local services, access fees, and, if commercial quantities of oil or gas are discovered, state and national taxes and royalties. CPAI has policies and procedures in place for hiring and training local residents. Additionally, \$28 million from the first lease sale was disbursed to the NSB to assist affected communities in dealing with potentially adverse impacts in the NPR-A. Another \$33 million from the 2002 resale was made available for community grants. No significant restriction on the continuation of subsistence in the project area is expected. In general, the proposed action is expected to have a short-term, largely beneficial effect on the local economy.

### Adverse Energy Impacts

Under direction from the National Energy Office, BLM is required to determine if an official decision will have an adverse energy impact (i.e., impact on energy development, production, supply and/or distribution). There would only be an adverse

<sup>78</sup> 1998 IAP/EIS. Section IV.A.6.a and Appendix D.

energy impact if the proposed action is denied or substantially reduced. If the proposed action is approved, there will be no adverse energy impact.

#### 4.3.2 Unavoidable Adverse Impacts

Despite the system of controls in place and the modern technology and methods proposed, some minor impacts from the proposed project cannot be avoided. They include:

- Temporary surface disturbance by winter drilling at well sites, with a permanent subsurface marker.
- Temporary increase in industrial activity affecting wintertime local tranquility and cultural solitude.
- Temporary minor impacts to tundra from the packed snow trail and ice roads/pads. Longer-term, but relatively minor, visual impacts from multiple green and/or brown trails along portions of the access corridors.
- Short-term visual and noise impacts of drill rig, camp, traffic, etc.
- Possible minor, temporary disturbance with possible displacement of some wildlife in the area while exploration activities are underway.
- Possible minor, temporary impact on subsistence resources and activities if caribou or other animal movements shift away from places where winter activity occurs or from associated summer activity, especially helicopter traffic.
- Possible minor, temporary loss of a few ground-dwelling animals (e.g., lemmings, voles, and ground squirrels) due to ice road/pad construction and the hardened overland trail. This would be an adverse impact to those individuals lost, but not to any local wildlife population.
- Temporary, localized, minor degradation of air quality and possibly water quality (oxygen depletion; wastewater disposal; spills).
- Possible temporary restriction of public access to land around drill sites during active drilling activities to meet air quality requirements.

Unavoidable adverse effects have been broadly evaluated for those areas considered for leasing,

leased, and subsequently explored.<sup>79, 80</sup> The site-specific effects expected from the proposed action are consistent with those impacts, and none of the impacts are expected to be significant during exploration over the next 5 years.

#### 4.3.3 Potential Impacts of Possible Future Permanent Facilities

Permanent facilities are expressly prohibited during exploration. In addition to stipulations associated with exploration and other activities, the 1998 ROD contains 20 stipulations that are specific to any future permanent facilities. CPAI has proposed development at two previously explored sites in the NPR-A, and is investing in further exploration to determine whether a commercial discovery of oil and gas exists on other leases, and whether production of any oil and gas reserves discovered under the proposed action is economically feasible. Potential impacts of possible future permanent facilities were evaluated in Section IV.G of the 1998 IAP/EIS and in Section IV.D.2 of EA: AK-023-01-003 and throughout the 2004 ASDP FEIS, both of which are incorporated by reference and summarized below.

General descriptions, issues, and potential impacts of oil and gas development were considered by the Interior Secretary in determining whether to proceed with lease sales, and where to offer lease sales in the Northeast NPR-A. The 1998 IAP/EIS evaluated the hypothetical discovery and production of two oil fields in the NPR-A south of Teshekpuk Lake. Impacts associated with conceptual development of two oil fields were discussed.<sup>81</sup>

In September 2004, the BLM released the ASDP FEIS for potential development of five satellite oil production pads, including two in the NPR-A in the vicinity of the proposed project. The ASDP includes 20-30 wells on each drill site, with transportation of product by pipeline to the Alpine Central Processing Facility, where it will then follow the current piped system for shipment to market at the Valdez Terminal. A ROD on the ASDP FEIS was signed in November 2004.

<sup>79</sup> 1998 IAP/EIS. pp. IV-I-1 through IV-I-3.

<sup>80</sup> 2003 Northwest NPR-A IAP/EIS. pp. IV-G.

<sup>81</sup> 1998 IAP/EIS. pp. IV-G-1 through IV-G-83.

If a commercially producible discovery is made as a result of the proposed action, subsequent work to develop and produce the oil and gas will also require a separate evaluation and public involvement process under NEPA, based on the specific development plan.

#### 4.4 POTENTIAL CUMULATIVE IMPACTS FROM THE PROPOSED ACTION

NEPA and its implementing guidelines require an assessment of the proposed project and other projects that have, or are likely to occur, and which together may have cumulative impacts that go beyond the impacts of the proposed project. CEQ Regulation 40 CFR 1508.7 defines cumulative impact as "...the impact on the environment which results from the incremental impact of the [proposed] action when added to other past, present and reasonably foreseeable future actions..."

This evaluation considers and incorporates by reference the cumulative impacts analysis contained in EA: AK-023-04-004 and EA: AK-023-04-005, which collectively cover the same area evaluated for this proposed project. In addition, this cumulative analysis considers and incorporates by reference *Effects of the Cumulative Case* from two recent EIS's in the same general locale.<sup>82,83</sup> Both of these analyses considered as reasonably foreseeable future development oil and gas discoveries or other projects that are expected to initiate development related activities (site surveys, permitting, appraisal drilling, or construction) within the next 20 years.

In addition to oil and gas development, other reasonably foreseeable actions included the Colville River Road project and continued human activities such as sport and subsistence hunting and fishing, commercial fishing, sport harvest, tourism, and recreational activities. The proposed project is for winter exploration drilling. The terms of the federal oil and gas leases expressly prohibit construction of permanent facilities for exploration or the use of gravel for pads, roads, and new all season airfields.

To keep the cumulative effects analysis focused and relevant to the proposed action, those activities that are more certain and more proximate to the proposed action are given greater weight. This includes:

- Winter geophysical (seismic) operations
- Traditional overland re-supply and winter travel associated with Barrow, Atkasuk, and Nuiqsut.
- Other winter exploration in NPR-A, the Colville Delta area, and western Foothills
- Construction of new production facilities evaluated in the Alpine Satellite Development Plan Final EIS.
- Construction of all season road access from the Dalton Highway to the general vicinity of Nuiqsut.

Based on the proposed action of winter exploration in a general area where prior winter exploration programs have been authorized and implemented without significant adverse impacts, this cumulative effects analysis considers:

- Wildlife disturbance
- Visual and functional impacts to the tundra
- Conflict with subsistence
- Oil and gas industrial development and associated pollution
- Economic potential for village and regional corporations and the NSB
- Increased state and federal revenues

##### 4.4.1 Framework of the Analysis

The cumulative effects of past, present, and reasonably foreseeable oil and gas activities as well as non-oil and gas activities were evaluated in the 1998 Northeast IAP/EIS and updated in the March 2003 National Research Council report of Cumulative Environmental Effects of Oil and Gas Activities on Alaska's North Slope, 2003 Northwest NPR-A IAP/EIS, September 2004 Alpine Satellite Development Plan Final EIS, June 2004 Draft Northeast IAP/EIS.

<sup>82</sup> ASDP FEIS. Section 4G. pp. 1233-1333.

<sup>83</sup> 2004 Draft Amended IAP/EIS. pp. 4-336 – 4-417.



Eleven project-specific EAs with FONSI have been prepared for winter exploration activities in the Northeast NPR-A (see Table 2). Subsequently, winter exploration work was approved and implemented on federal land in the NPR-A under the provisions of the 1998 ROD for the Northeast NPR-A IAP/EIS and the 79 stipulations contained therein. The proposed action involves the same type of winter exploration work evaluated in those earlier EAs. Winter exploration in similar terrain, with wildlife and fish habitat, other important resources, and subsistence use areas similar to the proposed action was conducted under provisions of the 1998 ROD, with no known direct, indirect, or cumulative significant adverse impacts.

It is recognized that the 1998 ROD may be revised when the Amended Northeast NPR-A IAP/EIS process is completed. However, stipulations contained in the 1998 ROD are also part of the federal oil and gas leases associated with the proposed action. Accordingly, this cumulative effects analysis assumes that the proposed action will be implemented in the same manner as previous winter exploration activities in NPR-A authorized under the 1998 ROD. This includes Stipulations 27 and 29 through 48, which prohibit permanent facilities during oil and gas exploratory drilling on federal land within NPR-A.

This cumulative effects analysis also considers the potential that methods for determining the winter overland travel season are being updated with advances in related technology. On federal land, BLM will determine when tundra travel may start on the basis of weather data and the use of a cone penetrometer to confirm that the ground is frozen to a depth of at least 12 inches on the actual overland travel route.

Other changes since the 1998 ROD that directly affects the North Slope, particularly NPR-A include:

- Fluctuation and increasing price of oil and gas
- Lowering U.S. production levels of oil with increasing dependence on foreign oil
- Oil industry realignment, with a commitment by industry to the Governor of Alaska for continuing investment in exploration and development in Alaska, with corresponding

opportunities for employment of Alaska residents

- Increasing opposition and litigation challenging offshore exploration and development
- A National Energy Policy that specifically references the need for continued and expanded leasing and permitting in NPR-A
- Increased threat to national and international security
- Proposal to develop oil and gas production facilities in NPR-A
- Discoveries of producible hydrocarbons, with potential development at the Spark and Lookout exploration sites

#### 4.4.2 Parameters of the Analysis

Many impacts associated with the various elements of a winter exploration program in NPR-A can be quantified. However, the analysis of cumulative effects is more qualitative because it is not just an additive process. BLM has established a threshold of acceptability in evaluating the nature of cumulative impacts with the proposed action. The basis of “unacceptable” consequences includes the following:

- Conflicts with the purpose and intent of related laws and policies
- Significant impacts to the local airshed
- Significant impacts to cultural and paleontological resources
- Significant impacts to species listed under the Endangered Species Act and EFH
- Significant impacts to the population and productivity of other animal plant species
- Significant impacts to floodplains, water resources, and water quality of the area
- Significant impacts to local lifestyles (i.e., subsistence)
- Significant impacts to the economy of the State and local governments
- Significant energy impacts

The proposed action includes no permanent facilities or long-term activities. Cumulative effects will be primarily based on a 5-year program of winter-only construction of new ice pads, ice roads, packed snow trails, and drilling camps. The cumulative effects analysis is bound by parameters appropriate of a relatively short-term winter

exploration program. It also considers actual impacts from drilling on federal land in NPR-A relative to the reasonably foreseeable cumulative effects evaluated in the 11 project-specific EAs.

The cumulative effects analysis also assumes that any existing authorizations for ice roads and water sources necessary to provide access to the proposed winter exploration drilling operations would have appropriate extensions or reauthorizations through the proposed project period. The cumulative effects of those existing authorizations would be no different individually, or collectively, that were considered by BLM for the original authorizations<sup>84</sup>.

#### 4.4.3 Analysis of Proposed Action

The proposed action would involve overland access during the winter when there is adequate snow cover and the ground frozen to a depth of 12 inches. Other similar overland winter travel includes bulk supplies (fuel, food, and freight) moved to Barrow and Nuiqsut along a cluster of coastal and landfast ice routes. BLM has marked easement trails for this purpose. Seismic work and other authorized winter exploration activities in NPR-A occur each winter. The existing technology and practices have successfully avoided creating long-term significant adverse cumulative effects. In general, non-oil and gas overland winter travel and seismic work are expected to continue to produce minimal cumulative effects.

The principal effect of this overland travel is the creation of additional “green” trails that can be seen from the air. Since 1999, the effects of packed snow trails and ice roads and pad construction in NPR-A have been field checked by BLM during construction, operation and during succeeding summers to determine if there were significant adverse environmental impacts. To date, cumulative impacts to the tundra vegetation have been relatively minor.

BLM has required exploration companies to monitor selected lakes to identify any recharge problems as a result of winter water withdrawals

for ice road/pad construction. No significant adverse effects from water withdrawal were found.

During the past five years, the BLM, the State, NSB, and private landowners have authorized access and construction of ice pads at up to 60 drill sites for drilling up to 147 wells in the Northeast NPR-A. Only 17 wells (and one sidetrack) have actually been completed on federal land. (See Table 7.) The protective Stipulations and mitigation measures included in the numerous authorizations for these 17 wells have resulted in no known significant individual or cumulative impacts to continued use of subsistence resources or to the environment in the Northeast NPR-A.

Multi-year winter exploration drilling projects within and adjacent to the NPR-A (including the proposed action) have been discussed with local residents through community meetings, NSB, regulatory and resource agencies, and the NPR-A SAP to assure that potential project-specific and cumulative effects are identified and avoided. This cumulative effects analysis also has taken special note of the concerns expressed by local residents on the continuing concern about potential effects for access to and use of subsistence resources<sup>85</sup>.

Previous analyses have generally concluded that the cumulative effects associated with exploration of oil and gas resources on valid leases within the NPR-A would be relatively minor and short-term and would not cause “unacceptable” consequences.

In the event that proposed action results in the discovery of commercial quantities of hydrocarbon there would likely be a westward expansion of production and transportation systems connecting to the Alpine field on the Colville Delta. The general timeframe for a typical oilfield is 1 to 10 years for exploration with discovery at any time during or after exploration. Development normally takes 3 to 6 years after the initial discovery. Production could last for 30 to 40 years with abandonment and rehabilitation taking 2 to 5 years for wells and revegetation 5 or more years<sup>86</sup>.

<sup>84</sup> See EAs cited in Table 2. Potential Cumulative Impacts, Section IV.5.

<sup>85</sup> ASDP FEIS pp.1295 – 1315. Draft Amended NE NPR-A IAP/EIS, pp. 4-402 – 4-410.

<sup>86</sup> ASDP FEIS, p. 1237.



Site specific and regional direct, indirect, and cumulative effects of any future development of permanent production and transportation facilities as a result of the proposed action would require additional NEPA Analysis. Construction of permanent facilities is expressly prohibited during exploration. Accordingly, an analysis of cumulative effects associated with development of production facilities such as was done for the Alpine Satellite Development Plan Final EIS is speculative and beyond the scope of this analysis.

A NEPA review was completed for the decision on federal leasing within the Northeast Planning Area. That effort is presently being re-evaluated under the Northeast NPR-A Amended IAP/EIS. As previously noted, the Stipulations contained in the 1998 ROD for the Northeast IAP/EIS are also incorporated in the federal leases that govern the proposed action. As such, this cumulative effect analysis is based on the existing 79 protective Stipulations incorporated in the federal leases.

Careful evaluation of each project within the NPR-A has been preformed to assure that the projected impact for each resource did not become a significantly adverse cumulative impact or to cause BLM to significantly modify the proposed action. In this respect, cumulative impacts from the proposed action are considered to be relatively minor and short-term. The appropriate agencies have been consulted to confirm that species listed under the ESA, MMPA, and EFH are not directly, indirectly, or cumulative impacted in a significantly adverse manner. In addition, this EA gives a strong weighting to actual impacts as a direct result of the environmental protections and requirements for ice road and hardened trail use, drilling from ice pads, water withdrawals from both fish-bearing and non-fish-bearing lakes, and for crossings of fish streams.

In conclusion, the cumulative effects associated with the proposed action in combination with other past, present, and reasonably foreseeable future actions are minor and short-term. Speculative discovery of economic hydrocarbon resources and proposals to construct permanent production and transportation facilities would be subject to additional NEPA review.

#### 4.5 MITIGATION AND MONITORING

CPAI and other North Slope Operators have worked actively towards minimal impact exploration techniques for the last several decades. As an example, CPAI has sponsored a series of workshops to discuss potential projects and environmental effects associated with previous winter exploration programs in and around the NPR-A and State lands to the east. Attendance has included key industry officials, North Slope operators and contractors, BLM and other regulators, and North Slope residents. Open discussions have focused on ways that future winter exploration activities could be performed with enhanced environmental protection. Many of the ideas posed at the workshop, such as effective means to reduce tundra damage, have been incorporated into company exploration plans, including the proposed project.

CPAI has also incorporated the extensive mitigation measures specified in the 1998 ROD in its winter exploration plan and permit applications to BLM and other regulatory agencies. All practicable mitigation has been adopted for this project.

BLM will give special attention to monitoring the following resources:

- Subsistence
- Cultural resources
- Tundra/vegetation
- Hydrology
- Fish habitat
- Sensitive species

Monitoring measures will involve 1) the drilling operation, including the drill rig and ancillary facilities, and 2) other surface activities. The former involves geotechnical and engineering considerations, (e.g., presence of H<sub>2</sub>S gas). The latter addresses protection of vegetation, wildlife, and fish habitat. The objective of this monitoring program is to ensure that all terms and conditions in federal oil and gas leases, the 1998 ROD, and associated BLM permits are met, as previously described and incorporated by reference.<sup>87</sup>

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<sup>87</sup> EA: AK-023-04-004. pp 4-16 and 4-17.

In compliance with Stipulation 59, CPAI will prepare a subsistence monitoring plan and provide biannual monitoring reports to BLM, the Research and Monitoring Team, and the Subsistence Advisory Panel. As part of this plan CPAI will keep local residents informed of planned and ongoing activities and a local representative will provide CPAI with community concerns and comments on NPR-A activities.

Snow removal beyond the minimal amount required for vehicle access and water/ice removal may occur on non-fish-bearing lakes, lakes less than 7 feet deep, and grounded portions of fish-bearing lakes. Removal of additional snow over free-water portions of fish-bearing lakes and construction of ice airstrips on fish lakes will require BLM and OHMP approval on a case-by-case basis. The approvals from OHMP are provided to BLM for consideration in making these determinations prior to additional snow removal or ice construction over free-water portions of fish-bearing lakes. Special attention has been given to assuring that all water intakes have proper fish screening, to stream crossings, and for breaching ice bridges before breakup to facilitate water flow.

Surface use and occupancy of the project area will terminate before the arrival of spectacled or Steller's eiders. Standard provisions for polar bear encounters and denning, handling of hazardous materials, fuel storage, and drilling operations will be monitored. Special stipulations for additional protection of raptors were recommended in the 1999 BLM Raptor Workshop.<sup>88</sup>

Additional mitigation measures developed as a result of the permitting process will modify the proposed action or will be incorporated by BLM, as appropriate. This EA considers OHMP conditions for all ice road/bridge crossings of fish-bearing streams, water withdrawal from lakes, and airstrip construction on frozen lake surfaces.

#### **4.6 SUMMARY OF ENVIRONMENTAL CONSEQUENCES**

Based on this impacts analysis, which has

considered and incorporated by reference, previous studies and findings on North Slope exploration in and outside the NPR-A, and stipulations and mitigation measures required by federal leases, it is concluded that direct and indirect impacts from the proposed action will be relatively minor and short-term. Cumulative impacts have been found to be within the parameters described in the 1998 IAP/EIS, and significant cumulative impacts not previously evaluated have not been identified.

Additionally, CPAI has maintained an open, effective communication process with local governmental entities and residents. The proposed action incorporates several excellent recommendations of local residents and governmental entities to ensure that the winter exploration program is environmentally responsible and does not cause significant restriction of subsistence use or access to subsistence resources.

It is concluded that the 79 stipulations included by the Secretary of the Interior in the 1998 ROD for the Final IAP/EIS for the Northeast NPR-A, combined with North Slope technology and procedures used by CPAI, and supplemental site-specific mitigation and monitoring measures, are adequate to assure maximum protection of fish and wildlife and other resources, including cultural, scenic, paleontological, and wilderness resources.

#### **4.7 IMPACTS OF THE ALTERNATIVES**

This EA considers the proposed action and alternatives to drill up to 12 wells from six ice drill pads on CPAI leases, during a 5-year exploration program. As noted, many alternatives were discussed in the 1998 IAP/EIS, where numerous stipulations were developed to provide maximum protection of the resources of the Northeast NPR-A while providing for exploration of oil and gas.

The proposed action continues existing authorized programs using similar technology; therefore, previous analyses of potential alternatives are incorporated by reference.<sup>89</sup> Based on previous analyses and goals of the proposed action, viable

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<sup>88</sup> EA: AK-023-01-003, p. IV-28.

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<sup>89</sup> EA: AK-020-00-011, pp. IV-26, 27 & 29. EA: AK-023-01-001, pp. IV-28 & 29.

alternatives are: 1) no action, 2) primary access by aircraft, and 3) primary access by packed snow trail with air support.

#### **4.7.1 Alternative 1 – Primary Access by Packed Snow Trail with Air Support**

Under this alternative, CPAI would construct a packed snow trail from the Alpine Development Area ice road (or other constructed ice road). Ice roads would likely be constructed locally to water sources to support construction of an ice airstrip and an ice drilling pads. Rolligons would provide the major heavy transportation until the airstrip is constructed and operational.

The value of this concept proves itself in long distance operations, where an ice road cannot physically be constructed in the time allowed due to the length of operating season. The applicant utilized this approach for the 2003 Puviq drilling program. This alternative has been previously evaluated in several earlier assessments, which are incorporated by reference.<sup>90</sup> In an extremely short season this alternative might have additional value for the ability to get to the drill site relatively early. This alternative expands the options available.

Prior evaluations of an ice road and packed snow trail alternatives all concluded that the primary differences are more from the ice road's need for water consumption (approximately 1.2 MG per mile) and slightly improved capability for response to a catastrophic event. While the reduced water use with no major ice road construction of this alternative may have some beneficial economic advantage, it increases the logistical costs by reducing the opportunities for competitive bidding for construction and transportation and limits the number of drill rigs available. Also, evaluations have shown that there are no significant adverse impacts on subsistence or other important resources in NPR-A associated with increased water usage when the lease stipulations are applied.

The alternative of packed snow trail for access only makes sense if an ice road is not constructed on the previously authorized east-west ROW to the project

area (see Figure 2). No adverse indirect or cumulative effects have been identified with either approach. Few drilling rigs are available that can be transported by air or Rolligon, which may extend the overall program to gather the same information as the proposed action.

#### **4.7.2 Alternative 2 – Access by Aircraft**

This alternative is based on an ice airstrip in the immediate vicinity of the drill site(s) scheduled for construction in any one year. Therefore, no ice road access except spur roads in the immediate vicinity of the drill sites, airstrip, and proposed water sources will be required. All other -- elements of design and operation would be essentially the same as the proposed action. This alternative has been evaluated in previous assessments, which are incorporated by reference.<sup>91</sup>

Under this alternative, the east-west ice road between Alpine and the drill sites would not be constructed, and primary access via aircraft would be utilized. A trail would be necessary to transport equipment to the site to construct an ice airstrip. Local access between the airstrip, drilling sites and water supply lakes would remain ice roads.

This alternative expands the options available, but is expensive and limited by the availability of drill rigs that can be disassembled into component parts for air transport. There would be no water withdrawals for ice road access, with the equivalent reduction in water needs (approximately 1.2 MG per mile). Slightly more time would be required for major spill response and operations such as logistical support, and waste management would be more difficult.

Previous evaluations associated with access by ice road or hardened overland trail concluded that the 79 lease stipulations would prevent significant adverse environmental impacts to important resources of NPR-A. Therefore, no overriding net environmental advantage is offered by selecting this alternative. Few drilling rigs are available that can be transported by air, which may extend the

<sup>90</sup> EA: AK-020-00-011, pp. IV-26 & 27. EA: AK-023-02-004, p. IV-29. EA: AK-023-02-005, pp. IV-26 & 27. EA: AK-023-02-033, pp. 8 and 9. EA: AK-023-03-008, p. 4-25.

<sup>91</sup> EA: AK-023-01-001, pp. IV-28 -- 30. EA: AK-023-02-005, pp. IV-26 & 27. EA: AK-023-02-005, p. IV-27. EA: AK-023-03-008, p. 4-25.

overall program to gather the same information as the proposed action.

#### **4.7.3 Alternative 3 – No Action**

This alternative considers that no action is authorized, which would eliminate minor effects associated with water removal, ice pad construction, ice road construction, and drilling. However, no oil would be discovered as a result, eliminating some potential to expand national energy reserves and increase revenues to federal, state, and local governments.

In addition, exploratory drilling in other NPR-A leases might not be pursued, due to the precedent of not approving a winter exploration drilling program that has been determined to have no significant or long-term site-specific or cumulative adverse impacts. This lessens the likelihood of production facilities in the NPR-A and slightly lessens cumulative impacts of other oil development in the region, but BLM might eventually have to buy back the federal leases associated with the proposed project.

The Applicant would have the option of canceling or redesigning the project, or otherwise seeking a change in the no-action decision. Finally, the no-action alternative might shift some exploration work to the offshore areas of the North Slope.

#### **4.8 COMPARISON OF IMPACTS**

Distinct advantages and disadvantages to each of the three alternatives have been evaluated. No significant adverse environmental impacts would occur when the 79 stipulations and mitigation/monitoring requirements are implemented.

In summary, it was determined that neither of the two action alternatives present net benefits to the environment nor would substantially reduce the environmental impacts of the proposed action. The no-action alternative presents a net disadvantage in that it does not comply with terms of federal laws and policies and does not allow access to existing, valid leases in the NPR-A. A combination of alternative modes of access presents the most flexible option – both for environmental protection and for operations that afford the potential to reduce the overall costs of winter exploration.

The proposed action, as amended, meets the objective of maximum protection to the environment while enhancing the collection of geologic/subsurface information in the shortest time frame. The No-Action Alternative suspends until a future time decisions about oil and gas exploratory drilling. Alternatives 2 and 3 require more time to obtain the same base of scientific knowledge about subsurface geology.

The two winter exploration alternatives and the proposed action, all impacts considered, are environmentally equal, since no significant adverse environmental impacts would occur when the 79 stipulations and supplemental mitigation/monitoring requirements are implemented as appropriate. The no-action alternative suspends until a future time decisions about oil and gas exploratory drilling. At that time, the environmental consequences of any proposed exploration activity would need to be evaluated in the light of technology and equipment in use at that time, the urgency to increase domestic energy supplies, and any revisions to existing Native Corporation, local, NSB, state, and federal requirements and to any revised environmental standards.

Several modifications to the proposed action were developed through this EA process and the associated permitting processes.

Modifications to the proposed action include:

- CPAI initially proposed an ice airstrip on grounded lake ice on a lake (lake B84059) near Kokoda 2. OHMP requested that CPAI move the airstrip to another location because lake B84059 contains lake trout. OHMP indicated that lake M0410, approximately 1 mile southwest of the proposed Kokoda 5 location, would be acceptable for an ice airstrip. Therefore CPAI requested a revision to their original application on November 15, 2004 to move the location of the airstrip to lake M0410.
- OHMP also requested that water withdrawal or ice aggregate removal be limited to a maximum of 15% of the under-ice volume below 7 feet of depth, but allowed 30% of winter volume deeper than

5 feet when only resistant fish are present. Stipulation 20 generally restricts water withdrawal on federal lands. CPAI has requested an exception for two lakes, M0305 and L9817 on federal land.

- On lake L9817 (a research lake), CPAI requested 18.32 MG (greater than 30 percent under 5 feet) of water. This lake is also located within the Kuukpik Village Corporation Selection Area. This request was submitted to Kuukpik and the NSB for their review. OHMP has required at least two feet of free water remain in the lake for resistant fish habitat (approximately 15.3 MG).
- OHMP requested that ice aggregate be removed only from areas that have been determined to be naturally frozen to the bottom. Stipulation 20 of the 1998 ROD also requires that water withdrawal from lakes 7 feet deep or deeper be limited to 15 percent of the estimated free water volume.

## **5 CONSULTATION AND COORDINATION**

### **5.1 AGENCY COORDINATION**

The proposed action has undergone review by the NSB, state and federal agencies, and the general public. The USFWS concurred with BLM's "No-Effect Determination" on threatened and endangered species on 11/29/2004. In preparing its plan of operations, CPAI conducted a series of meetings with local residents. CPAI, BLM and local residents participated in an on-site inspection of the proposed drill sites. The Inupiat History, Language, and Culture Commission (IHLCC) Liaison and Village Elders provided Traditional Knowledge, which was incorporated in the project plan and into this assessment. CPAI also provided documents and permit applications that summarize the proposed action. BLM and CPAI have met to discuss the proposed action approximately monthly from spring 1999 to the present.

A SAP has been established by BLM and a subsistence plan was prepared by CPAI. The proposed plan and the current status of the proposed project have been discussed at meetings with NPR-A SAP, ICAS, NSB Planning Commission, NVB, Native Village of Nuiqsut, the Kuukpik Corporation, KSOP, and the public in Barrow, Nuiqsut, Atqasuk, Anaktuvuk Pass, and Wainwright. A summary of community involvement in NPR-A exploration program planning (1998-present) is included in Table 9.

The preparers of this EA have made the following contacts in setting the scope of analysis and alternatives to be addressed:

- ♦ USFWS
- ♦ ADNR
  - Division of Mining, Land, and Water
  - Office of Habitat Management and Permitting
- ♦ NSB
- ♦ NPR-A SAP

### **5.2 LIST OF PREPARERS**

This EA was prepared by BLM with technical assistance from the Hoefler Consulting Group, a third-party contractor. Following is a list of BLM staff and Hoefler team members involved in preparation of the EA.

#### **BLM**

- ♦ Dave Yokel, Wildlife Biologist
- ♦ Michael Kunz, Archaeologist
- ♦ Susan Flora, Environmental Scientist
- ♦ Mike Worley, Realty Specialist
- ♦ Don Meares, Natural Resource Specialist
- ♦ Rob Brumbaugh, Physical Scientist
- ♦ Richard Kemnitz, Hydrologist
- ♦ Darek Huebner, Natural Resource Specialist
- ♦ Stan Porhola, Petroleum Engineer
- ♦ Donna Wixon, Natural Resource Specialist
- ♦ Debbie Nigro, Wildlife Biologist
- ♦ Matt Whitman, Fisheries Biologist
- ♦ Stacie McIntosh, Anthropologist/Subsistence Specialist

#### **Hoefler Consulting Group**

- ♦ Sandra Hamann
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- ♦ Brian Hoefler, P.E.
- ♦ Deborah Heebner
- ♦ Riki Lebman

Blue Skies Solutions, LLC  
(Vegetation mapping and graphics)

**Table 9. Community Involvement in NPR-A Exploration Program Planning**

<b>Date</b>	<b>Event (Some specify applicant and/or project focus)</b>
1/8-9/98	Meeting with community members to identify cultural/traditional use data (BPX)
8/21/98	Meeting with community members to identify cultural/traditional use data (BPX)
6/2/99	Advised Arctic Slope Regional Corporation (ASRC) and Kuukpik Corporation of (BPX) intent to drill
6/24/99	Meetings with NSB Agencies (Planning and Public Works) (BPX)
6/29/99	Briefed Kuukpik Corporation on survey work and field activities (BPX)
7/99	Meeting with Nuiqsut leaders to identify concerns; briefed ICAS (BPX and ARCO)
7/27/99	Meeting with Kuukpik Subsistence Oversight Panel (BPX and ARCO)
7/29/99	Meeting with Kuukpik Subsistence Oversight Panel (BPX and ARCO)
7/29/99	Meeting with NSB Planning Commission (Barrow) (BPX)
7/29/99	Meeting with Inupiat History, Language, and Culture Commission (IHLCC) in Barrow (BPX)
7/29/99	Meeting with Nuiqsut Community (BPX and ARCO)
8/4/99	NSB, IHLCC, Kuukpik Corporation site visit to proposed (BPX) drilling sites, water sources, and access routes
8/10/99	Site tours; NSB, Kuukpik Corporation visited drill sites, lakes, and access routes with ARCO and BLM
8/18/99	Community meeting at Anaktuvuk Pass (BPX and ARCO)
8/26/99	Open house at Barrow (BPX and ARCO)
8/26/99	Meeting with NSB Planning Commission (ARCO)
8/27/99	Community meeting at Atqasuk (BPX and ARCO)
9/30/99	NSB elders from Barrow and Nuiqsut toured (ARCO) water withdrawal lakes
10/6/99	1st Annual Ice Road Construction Symposium (agencies, operators & NSB residents participating)
10/27/99	Meeting with NSB Fish and Wildlife Management Committee (BPX and ARCO)
11/4/99	Meeting with NSB and IHLCC (BPX and ARCO)
11/10/99	Job fair (Nuiqsut) (BPX and ARCO)
12/15/99	Community meeting at Barrow (BPX and ARCO)
12/15/99	ICAS meeting (BPX)
12/16/99	Meeting with NSB Planning Commission (BPX and ARCO)
12/16/99	Meeting with the Native Village of Barrow (BPX)
12/16/99	NPR-A Subsistence Advisory Panel public meeting in Barrow (included BPX and ARCO)
3/7/00	NPR-A Subsistence Advisory Panel meeting in Nuiqsut (included BPX and ARCO)
3/28/00	Meeting with NSB Fish and Game Management (BPX)
5/22/00	Consultation with NSB biologists regarding summer studies (BPX)
6/8/00	NPR-A Subsistence Advisory Panel meeting in Nuiqsut (included BPX and ARCO)
8/4/00	Pre-application meetings with NSB and ICAS (BPX)
8/9/00	NPR-A Subsistence Advisory Panel meeting in Wainwright (included BPX and ARCO)
8/26/00	Site visit with BLM and NSB and applicants (BPX and Phillips)
8/31/00	Meeting with NSB Planning and Zoning Commission (BPX)
9/28/00	Meeting with NSB Planning and Zoning Commission (BPX)
10/11/00	Presentation of proposed programs in Anaktuvuk Pass (BPX and Phillips)
11/8/00	2 <sup>nd</sup> Annual Ice Road Symposium (agencies, operators & NSB residents participating)
5/3/01	Village meeting in Anaktuvuk Pass (Phillips)
6/01	Meeting with Kuukpik Corporation executives (Anadarko's 5-year plan on North Slope)
7/16/01	NPR-A Subsistence Advisory Panel meeting in Nuiqsut
7/31/01	Meeting with BLM at Altamura site (Anadarko)
8/8/01	Site visit with regulatory agency and members of the City of Nuiqsut Cultural Guardians and Kuukpik Subsistence Oversight panel at Altamura drill pad locations (Anadarko)
8/13/01	Staking and site visit with Nuiqsut, BLM, and Applicant (Phillips)
8/16/01	NPR-A Subsistence Advisory Panel meeting in Nuiqsut – all projects (included Phillips and Anadarko)

## December 2004

Table 9, continued

Date	Event (Some specify applicant and/or project focus)
11/7/01	3 <sup>rd</sup> Annual Ice Road Symposium (with agencies, operators & NSB residents participating)
11/26/01	Community meeting in Nuiqsut Pass (Anadarko)
11/26/01	Community meeting in Wainwright (Phillips)
11/27/01	Community meeting in Atqasuk (Phillips)
11/28/01	Community meeting in Anaktuvuk Pass (Anadarko)
11/29/01	Community meeting in Nuiqsut (Phillips)
12/13-14/01	NPR-A Subsistence Advisory Panel meeting in Barrow
3/14/02	NPR-A Subsistence Advisory Panel meeting in Barrow
5/16/02	Community meeting in Anaktuvuk Pass (ConocoPhillips)
6/6/02	NPR-A Subsistence Advisory Panel meeting in Nuiqsut
7/25/02	NSB Planning Commission Meeting presentation (ConocoPhillips)
8/15/02	NPR-A Subsistence Advisory Panel meeting in Nuiqsut (including ConocoPhillips)
11/4/02	KBRW Radio call-in (local exploration activities)
11/6/02	4th Annual Ice Road Symposium (with agencies, operators & NSB residents participating)
11/7/02	Community meeting in Nuiqsut (ConocoPhillips)
11/18/02	Government-to-government meeting with Native Village of Barrow (and BLM)
11/22/02	Barrow Open house (ConocoPhillips)
12/5/02	Community meeting in Atqasuk (ConocoPhillips)
12/12/02	NPR-A Subsistence Advisory Panel meeting in Barrow (included ConocoPhillips)
1/29/03	Presentation at joint meeting of NSB Planning Commission and IHLC (ConocoPhillips)
2/24/03	Community Meeting in Wainwright (ConocoPhillips)
2/25/03	Community Meeting in Atqasuk (ConocoPhillips)
2/26/03	NPR-A Subsistence Advisory Panel Meeting - Barrow
3/10/03	<i>Planned Community Meeting Anaktuvuk Pass (weathered out – ConocoPhillips)</i>
3/27/03	Open House in Barrow (ConocoPhillips)
4/24/03	NSB Planning Commission Meeting presentation (ConocoPhillips)
6/19/03	NPR-A Subsistence Advisory Panel Meeting in Nuiqsut (included TOTAL and ConocoPhillips)
7/31/03	NSB Planning Commission Meeting presentation (ConocoPhillips)
9/25/03	NSB Planning Commission Meeting presentation (ConocoPhillips)
10/7/03	5 <sup>th</sup> Annual Tundra Access [Ice Road] Symposium (with agencies, operators & NSB residents participating)
10/30/03	NSB Planning Commission Meeting presentation in Barrow (TOTAL)
11/3/03	NPR-A Subsistence Advisory Panel Meeting in Atqasuk (included ConocoPhillips and TOTAL)
11/4/03	Community Meeting in Atqasuk (ConocoPhillips and TOTAL)
11/20/03	Community Meeting in Nuiqsut (ConocoPhillips and TOTAL)
11/24/03	<i>Planned Open House in Point Hope (Weathered out - ConocoPhillips)</i>
11/25/03	<i>Planned Open House in Point Lay (Weathered out - ConocoPhillips)</i>
12/8/03	Community Meeting in Anaktuvuk Pass (ConocoPhillips)
12/11/03	NPR-A Subsistence Advisory Panel Meeting - Barrow
1/29/04	Open House - Barrow
3/16/04	NPR-A Subsistence Advisory Panel Meeting - Nuiqsut
5/20/04	Community Meeting - Wainwright
6/2/04	Community Meeting – Pt. Lay
6/10/04	NPR-A Subsistence Advisory Panel Meeting - Barrow
8/4/04	Community Meeting – Anaktuvik Pass
8/19/04	Alaska Oil and Gas Association 2004 Projects Conference (with agencies, operators & NSB participating)



**December 2004**

11/4/04	Community Meeting - Nuiqsut
11/9/04	NPR-A Subsistence Advisory Panel Meeting - Nuiqsut

**Public Meeting in Nuiqsut.**



**Well Location after the drilling of Altamura 1.**

